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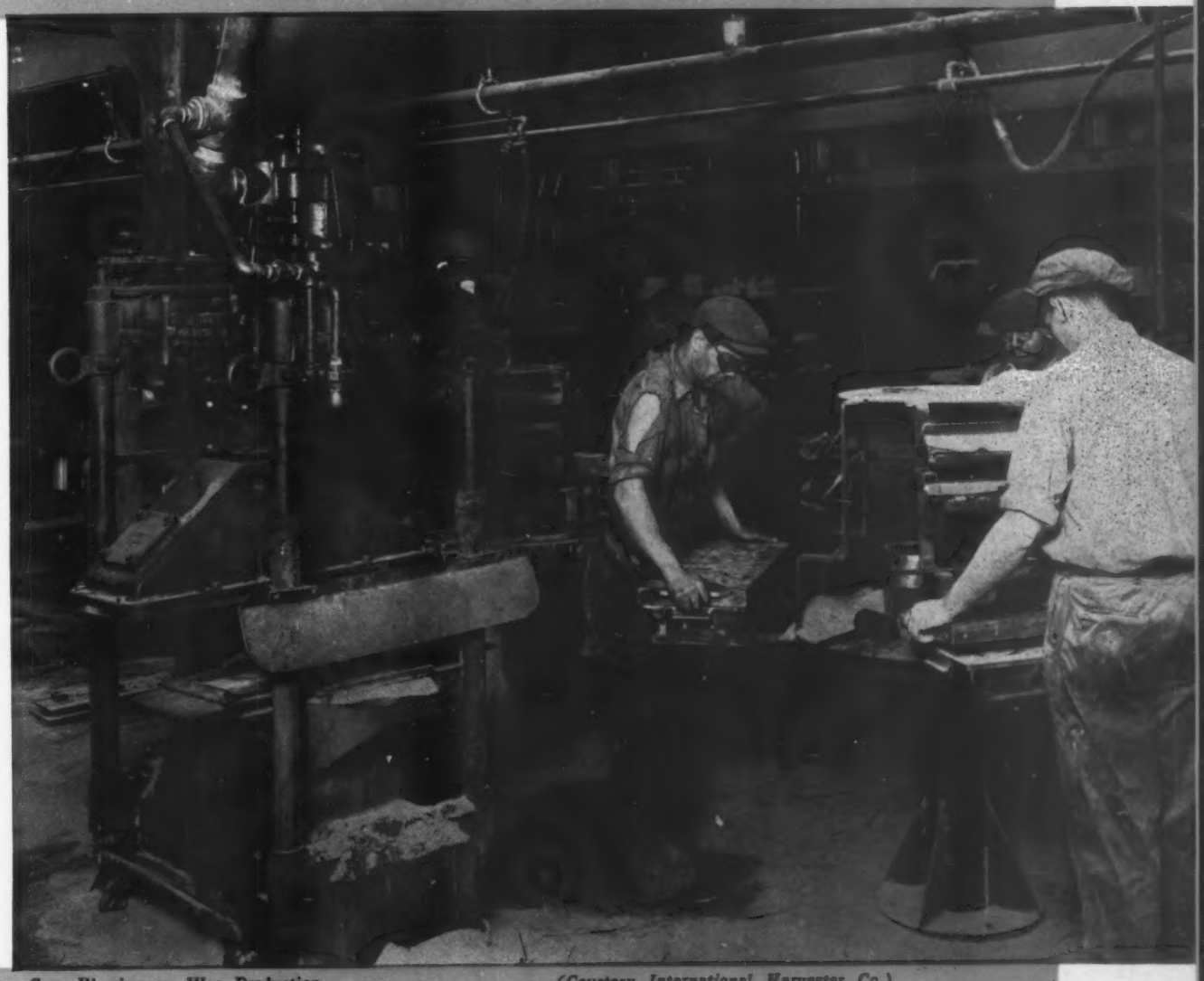
American Foundryman

A PUBLICATION PRESENTING ASSOCIATION AND CHAPTER ACTIVITIES



Core Blowing on War Production. *(Courtesy International Harvester Co.)*

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Februa
1943

Foremen Must Be Trained

NEVER before in the history of the United States has the word TRAINING been so foremost in the mind of every American. We must build and TRAIN an armed force for the protection of this great freedom of ours to the enormous sum of over ten million strong. Many, many of these must be taken from our shops, and this, naturally, adds another great task of TRAINING replacements in industry for the men called to the colors.

Production of war materials has been on a constant increase and greater production must be had to insure final victory. This, of course, means the TRAINING of new men and women in order to accomplish the desired goal.

The enormous interlocking program of Training will necessitate our calling upon every possible source of assistance. Many Federal, state, and school aids are available and should be used as well as established Training programs that exist in many plants throughout the country. The use of such plans or courses will go a long way in the Training of a worker, but for the actual finishing touches of how to do a job, we must fall back on our old reliable, "The Foreman."

Foreman Training in the foundry and allied departments appears to be more of a necessity than at any time during the history of the industry. Some foremen must be taught to TRAIN the new workers as well as instruct the new methods resulting in increased production. Also, new foremen must be TRAINED to replace those who have enlisted or been called to the Army, Navy, or some Federal agency for the furtherance of this great war effort.

Most of us realize that the TRAINING of foremen for our present day requirements needs attention and the method and responsibility of how to do this job apparently rests with the individual companies making up the industry. The fact remains, however, that something should be done, and the TRAINING of Foremen demands immediate action.

The members of the Foreman Training Committee of your Association are all carrying a heavy load in their various present capacities. But they are all in a position to eke out a little time to assist with your Foreman Training problems should you desire to call upon them.

W. G. Conner Jr.

W. G. CONNER, JR., Chairman,
A.F.A. Foreman Training Committee.

W. G. CONNER, JR., General Superintendent of the Washington Park Works, Walworth Company, Washington Park, Ill., was formerly superintendent of foundries at the company's Greensburg Works. A member of the A.F.A. Foreman Training Committee for a number of years, he now is serving as Chairman. Mr. Conner has been active for a long period of time in foundry training work.

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Reading Steel Casting Div.,
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American Foundryman

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Published by the American Foundrymen's Association, Inc., 222 West Adams St., Chicago, Ill., for the purpose of presenting Association and Chapter activities. Published monthly. Subscription price, to members, $1.00 per year; to non-members, $1.50 per year. Single copies, 20c.

Entered as second class matter July 22, 1938, at the post office at Chicago, Illinois, under the Act of March 3, 1879.

"The Second Fifty Years"

C. E. Westover
Executive Vice-President,
American Foundrymen's Association.

CURRENT discussions of the Foundation of the A.F.A. have encouraged many of the oldtimers to think back upon the long and useful course of the Association's affairs since its establishment in 1896.

THESE reminiscences can serve a valuable purpose at a time when officers and various technical committees are combining their talents in the formulation of an expanded and long-range program which the Foundation will help to finance.

IN REVIEWING A.F.A. accomplishments, a mere ten have been selected, not that they seem to be the most significant, but rather that they represent such a wide diversity of Association activity as to properly reflect the breadth of interests which it has fostered in past and may be expected to encourage in future:

1. ***Since 1896 the A.F.A. apprentice training program has resulted in many thousands of better trained workers.***
2. ***Present-day uniform cost method procedures have emerged from an A.F.A. activity which began at the turn of the century.***
3. ***Three decades of work have gone into present A.F.A. codes on foundry safety and hygiene, and the revisions are still going on.***
4. ***Through silicosis education, the A.F.A. reduced the hysteria and racketeering which had attached to this condition, forming a basis for much of present equitable legislation, as well as insurance premium reductions.***
5. ***Present-day Bureau of Standards practices relating to use of standardized drillings in chemical analysis of metals are an outgrowth of A.F.A. work begun in 1897.***
6. ***The American Society for Testing Materials owes the origin of much of its standardization of specifications for cast metals to A.F.A. work, dating from about 1900.***
7. ***A.F.A.-sponsored sand researches have since 1921 resulted in incalculable castings production savings by reclamation, reduced castings losses, and improved finishes.***
8. ***Understanding of non-destructive testing of cast metals has been greatly enhanced as a result of A.F.A. committee work.***
9. ***The A.F.A. has materially expanded the practical application of principles of heading and gating.***
10. ***It is recognized that the publications of the A.F.A., including "Transactions," its numerous handbooks and other material, record the greatest amount of authoritative information in existence on all foundry subjects.***

SINCE 1896, when John Penton was the Secretary, a wealth of recorded knowledge has been brought to the industry through the untiring and voluntary service of Association members. But abundant as has been this yield in past, the process must go endlessly forward, for truthfully it can be said that no individual, organization or nation remains stationary —there must either be progression or retrogression.

AND so, as the A.F.A. contemplates the next steps in a growing usefulness, the spirit of the founders and successive leaders of this Association is reflected in the vision and the initiative which are revealed by the broad outlines of the contemplated program —the program for the future.

UNDER somewhat arbitrary headings, there follows a brief listing of some of the project ideas which have been submitted to the Association by members in all parts of the United States. If, as Charles Kettering has said, research is America's secret weapon, then research, correlation, publication, and the extension of education are indeed America's whole arsenal, for these are the things which have made America's industrial might—and it is these same things which will determine the growth and well-being in future of the foundry industry.

1. **Correlation and Publication.** Development of a college text on castings design; raw materials, sand and metal statistical report, pamphlet series on castings methods, physical property determinations of metals, foundry facings, foundry melting processes, heading and risering principles and practices, fluidity testing and control, and others.

2. **Research.** Development and improvement of control testing equipment, continued sand and other mold material research, continued cupola research, properties of fuels, study of melting practices, study of refractories, improvement of methods of physical testing, theory and practice of solidification of cast metals, thermal gradients in molds, a great amount of this to be accomplished through expanding the practice of fellowships.

3. **Casting Education.** Development of standardized courses in foundry work for engineering colleges and trade schools, popular booklet on history, manufacture, and uses of castings, one- or two-reel motion pictures on same, cultivation of engineering and vocational schools, series of popular pamphlets on several aspects of foundry industry, development of general foundry publicity; development of procedures by which to interest high school boys in foundry work, various international exchange fellowships, as well as other international cooperative projects.

THE ultimate determination of what activities are to be prosecuted first will, of course, be developed between the Board of Directors, the Board of Foundation Trustees, and a proposed industry-wide Advisory Council of twenty-one members. The individual projects, in turn, will be subject at all times to the intimate supervision of qualified technical committees, in pursuance and extension of a system which has proved its value by bringing to the industry the benefits of almost half a century of technological progress. That is the plan of volunteer-study participation which makes the A.F.A. unique as an organization serving the foundry field.

Users of Facts—Modern cupola operation is an outgrowth of years of painstaking study and experimentation. Tomorrow's foundry practice too will depend on endless seeking after new and better methods.

Committee Presents Nominations for Officers and Directors for 1943

Lee C. Wilson, Reading Steel Casting Div., American Chain & Cable Co., Inc., Reading Pa., nominated as President of American Foundrymen's Association.

Ralph J. Teetor, Cadillac Malleable Iron Co., Cadillac, Mich., nominated as Vice President, American Foundrymen's Association.

Duncan P. Forbes, Gunite Foundries Corp., Rockford, Ill., retiring President of the Association, nominated as a member of the Board of Directors.

LEE C. WILSON, general manager, Reading Steel Castings Division of American Chain & Cable Co., Reading, Pa., was nominated as president of the American Foundrymen's Association, at a meeting of the A.F.A. Nominating Committee held in Chicago, January 10. At the same time Ralph J. Teetor, president, Cadillac Malleable Iron Co., Cadillac, Mich., was nominated for the vice-presidency.

Both the presidency and vice-presidency are for one-year terms. New officers and directors are elected at the Annual Business meeting of the Association, and take office following the annual A.F.A. Foundry Congress, to be held this year at St. Louis, April 28-30. Mr. Wilson was nominated to succeed D. P. Forbes, president, Gunite Foundries Corp., Rockford, Ill., who has been nominated for a 3-year directorship.

New Directors Nominated

In addition to President Forbes, the following were nominated as directors for 3-year terms:

Roy M. Jacobs, President, Standard Brass Works, Milwaukee, Wis.
Max Kuniansky, General Manager, Lynchburg Foundry Co., Lynchburg, Va.
Harry Reitinger, Resident Manager, U. S. Pipe & Foundry Co., Burlington, N. J.
W. B. Wallis, President, Pittsburgh 'Lectromelt Furnace Corp., Pittsburgh, Pa.

The report of the Nominating Committee was presented by Chairman H. S. Washburn, Plainville Casting Co., Plainville, Conn., and past president of A.F.A. The committee was selected and met in accordance with the Association's by-laws, and is composed of the last three living past presidents and four other members elected by the Association. The senior past president committee member is the chairman.

Other directors of the Association who will continue on the Board after the 1943 Congress are as follows:

J. G. Coffman, Plant Manager, Los Angeles Steel Casting Co., Los Angeles.
M. J. Gregory, Factory Manager, Foundry Division, Caterpillar Tractor Co., Peoria, Ill.
Vaughan Reid, President and General Manager, City Pattern Works, Detroit.
L. N. Shannon, Vice-President, Stockham Pipe Fittings Co., Birmingham, Ala.
J. E. Crown, Master Mechanic, U. S. Naval Gun Factory, Washington, D. C.
H. S. Simpson, President, National Engineering Co., Chicago.
I. R. Wagner, President, Electric Steel Castings Co., Speedway, Indianapolis, Ind.
S. V. Wood, President and Manager, Minneapolis Electric Steel Castings Co., Minneapolis, Minnesota.
W. L. Woody, Asst. to President, National Malleable & Steel Castings Co., Sharon, Pa.

Directors Retiring in 1943

Directors whose terms of office will expire at the time of the 1943 Congress in April are:

George W. Cannon, Vice-President, Campbell, Wyant & Cannon Foundry Co., Muskegon, Mich.
B. D. Claffey, Manager, Gray Iron and Aluminum Division, General Malleable Corp.; Milwaukee, Wis.
Harold J. Roast, Vice-President, Canadian Bronze, Ltd., Montreal, Que.
L. P. Robinson, Director of Core Oil Sales, Werner G. Smith Co., Cleveland.
H. S. Washburn, President, Plainville Casting Co., Plainvile, Conn.

New Officers and Directors

All of the new officers and directors nominated for office in 1943 are well known as outstanding executives in the foundry and allied industries. They have been active over the year in the techni-

R. M. Jacobs, Standard Brass Works, Milwaukee, nominated a member of the Board of Directors.

Max Kuniansky, Lynchburg Foundry Co., Lynchburg, Va., nominated a member of the Board of Directors.

Harry Reitinger, U. S. Pipe & Foundry Co., Burlington, N. J., nominated as a Director.

W. B. Wallis, Pittsburgh 'Lectromelt Furnace Co., Pittsburgh, nominated a member of the Board.

cal, educational and chapter work of this Association.

Lee Wilson, nominated to serve as President, now is serving as Vice-President, and formerly served three years as a Director. He has also been most active in the work of the Steel Founders Society of America, this year as vice-president.

Ralph Teetor, in addition to serving three years as an A.F.A. Director, has been a member of the advisory committee of the Malleable Division, and is a director of the Western Michigan chapter.

Duncan Forbes, nominated as a Director, now is President of A.F.A., and has been prominent in committee work of the Malleable Division of A.F.A. and the Malleable Founders Society.

Max Kuniansky is one of the foremost gray iron metallurgists and operating men, and is a director of the Chesapeake chapter. At the 1941 Convention of the Association, Mr. Kuniansky was awarded the A.F.A. McFadden Gold Medal for his outstanding contributions to the industry.

Roy Jacobs, well known in the non-ferrous foundry industry, has been especially active in the organization work of the Wisconsin Chapter, serving as president in 1938-39.

Harry Reitinger, well known in the pipe casting industry, has served as a director of the Philadelphia Chapter, and at present is Chairman of that group.

Sections of Cupola Manual To Be Discussed at 1943 Congress

ONE of the high points of the gray iron program at the 1943 Foundry Congress, it is expected, will be the discussion of sections of the manual on cupola operation and theories now being prepared under the A.F.A. Cupola Research Program. Manual material is being correlated and edited by Dr. E. E. Marbaker, Mellon Institute, Pittsburgh, under direction of a steering committee of five members of the General Cupola Research Committee.

The steering committee is meeting regularly, reviewing the work of the eight subcommittees entrusted with preparing sections of the manual. Its preparation is one of the important projects undertaken and planned by the Cupola Research Committee.

Meanwhile, the following additional subscribers to the Cupola Research Project have been announced.

Cupola Research Project

Additional Pledges,
December 18, 1942, to January 20, 1943

John D. Alexander, Cleveland.
Allis-Chalmers Mfg. Co., Milwaukee.
The American Laundry Machinery Co., Rochester, N. Y.
Brillion Iron Works, Inc., Brillion, Wisconsin.
Busch-Sulzer Brothers-Diesel Engine Co., St. Louis, Mo.
Campbell, Wyant & Cannon Foundry Co., Muskegon, Mich.
Edwin S. Carman, Inc., Cleveland.
Carpenter Brothers, Inc., Milwaukee, Wisconsin.
Chain Belt Co., Milwaukee, Wis.
Delta Oil Products Co., Milwaukee.
Stanley G. Flagg & Co., Philadelphia.
Florence Pipe Foundry & Machine Co., Florence, N. J.
Foundries Supply & Sales Co., Milwaukee, Wis.
General Malleable Corp., Waukesha, Wisconsin.
Walter Gerlinger, Inc., Milwaukee.
J. E. Gilson Co., Port Washington, Washington.
Grede Foundries, Inc., Wauwatosa, Wisconsin.
Gunite Foundries Corp., Rockford, Illinois.
R. Hoe & Co., Inc., Dunellen, N. J.
Iroquois Foundry Co., Racine, Wis.
Kohler Company, Kohler, Wis.
The Laclede Gas Light Co., St. Louis, Mo.
Lake Erie Foundry Co., Buffalo, New York.
Laurel Machine & Foundry Co., Laurel, Miss.
Lufkin Foundry & Machine Co., Lufkin, Texas.
M. & M. Gray Iron Foundry, Waupun, Wis.
Mabry Foundry & Machine Co., Beaumont, Texas.
Marion Malleable Iron Works, Marion, Ind.
Menomonee Falls Mfg. Co., Menomonee Falls, Wis.
Midvale Mining & Mfg. Co., St. Louis, Mo.
Milwaukee Chaplet & Mfg. Co., Milwaukee, Wis.
Milwaukee Foundry Equipment Co., Milwaukee, Wis.
Neenah Foundry Co., Neenah, Wis.
Nordberg Mfg. Co., Milwaukee, Wis.
Pohlman Foundry Co., Buffalo, N. Y.
Production Pattern Co., Milwaukee.
Sowers Mfg. Co., Buffalo, N. Y.
Textile Machine Works, Reading, Pennsylvania.
Walsh Refractories Corp., St. Louis, Missouri.
Warren Foundry & Pipe Corp., Phillipsburg, N. J.
Wisconsin Grey Iron Foundry Co., Milwaukee, Wis.

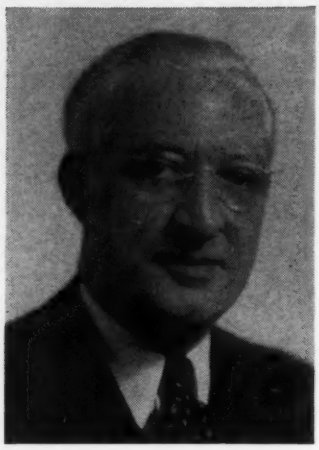
Program Makers Plan Wartime Aids for Industry at 1943 Foundry Congress

WITH the emphasis on helping foundrymen meet urgent military requirements for cast metals—*on time*—the program for the 2d War Production Foundry Congress is being planned to further increase the industry's already great war effort. This year's Congress, the second since Pearl Harbor, will be held under wartime conditions that are expected to add greatly to the serious purpose of the event and the value of attendance.

St. Louis was selected as the Congress city because of increasing importance as a foundry center since the war began. It is accessible from all parts of the country, a point of major importance under present travel restrictions. To conserve the time of hard-pressed operating executives, this Congress will be held to three days, April 28, 29 and 30. As a result, the program will be concentrated, streamlined, frill-less and packed full of interest.

"Off the Record" Sessions

One interesting development will be the holding of a number of "off-the-record" panel discussions, according to plans announced by the A.F.A. Program Committee, under general chairmanship of Fred J. Walls, International Nickel Co., Detroit. Important problems in meeting war production needs will be discussed at these meetings, with papers and talks by foundrymen and Government officials.



L. J. Desparois,
Pickands Mather & Co.
General Chairman
St. Louis Convention Committee

Discussions of Light Metals

Few sessions, it is expected, will produce more interest than those scheduled concerning foundry practices for aluminum and magnesium castings. This part of the program is being handled by the recently organized Aluminum and Magnesium Division of A.F.A., under chairmanship of Dr. N. E. Woldman, Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J.

Each of the other Association divisions, of course, is planning its own special activities. Thus the Brass and Bronze Division, of which Wm. Romanoff, H. Kramer & Co., Chicago, is chairman, will stress recommended foundry practices for the various standard alloys and those in demand for war use.

The Malleable Division, headed by Carl F. Joseph, Saginaw Malleable Iron Div. of General Motors Corp., Saginaw, Mich., is sponsoring a 3-session symposium on malleable melting practices, covering all the standard and special melting methods.

Steel foundrymen will be served through the several sessions of their division, mainly stressing melting and testing developments. Chairman of the Steel Division is C. E. Sims, Battelle Memorial Institute, Columbus, Ohio, with T. N. Armstrong, International Nickel Co., New York, chairman of the Program Committee.

A 2-session symposium on Cast Iron as an Engineering Material will feature the Gray Iron Division activities. Development of this symposium is being supervised by R. G. McElwee, Vanadium Corp. of America, Detroit, who also is connected with the War Production Board at Washington. Gray iron men also will participate in sessions on cupola practice and use of scrap.

Bolton Foundation Lecturer

A high point of the entire Congress will be the address by John W. Bolton, The Lunkenheimer Co., Cincinnati, as the first A.F.A. Foundation Lecturer. The Lecture was established to present outstanding technical material covering important metallurgical developments and trends of the casting industry. An outstanding metallurgist, Mr. Bolton's selection has been widely acknowledged.

It is expected that a large number of officials of the Federal and Army and Navy groups will be present to address vari-

C. B. Shanley,
Semi-Steel Casting Co.
Chairman, St. Louis District Chapter
St. Louis Convention Committee

Webb L. Kammerer,
Midvale Mining & Mfg. Co.
General Vice-Chairman
St. Louis Convention Committee

Lloyd C. Farquhar,
American Steel Foundries
Chairman, Reception Committee

Luther A. Kleber,
General Steel Castings Corp.
Chairman, Annual Dinner Committee

John W. Kelin
Federated Metals Div.,
American Smelting & Refining Co.
Chairman, Publicity Committee

ous sessions. Round table or panel discussions also are being sponsored by the committees on Plant Equipment, Patternmaking, Apprentice Training, Foreman Training, Job Evaluation, Sand Control and Research, Safety and Hygiene, and Foundry Costs.

St. Louis Chapter Host

Acting as official host to the Congress will be the St. Louis District Chapter, under chairmanship of C. B. Shanley, Semi-Steel Casting Co. Mr. Shanley has appointed L. J. Desparois, Pickands Mather & Co., to act as General Chairman of the Congress Committee, with W. Kammerer, Midvale Mining & Supply Co., the Vice-Chairman.

Chairmen of the various Congress activities also have been selected, as shown below. As a result, those who attend the Congress can rest assured that everything possible is being done to make this meeting outstandingly profitable as an aid to the industry's war production effort.

St. Louis District Chapter Congress Committee

General Chairman, L. J. Desparois, Pickands Mather & Co.

General Vice-Chairman, W. L. Kammerer, Midvale Mining & Supply Co.

Chapter Chairman, C. B. Shanley, Semi-Steel Casting Co.

Secretary-Treasurer, John Williamson, M. A. Bell Co.

Chairman, Hotel Committee, Eugene Ballard, National Bearing Metals Co.

Chairman Reception Committee, Lloyd Farquhar, American Steel Foundries, East St. Louis, Ill.

Chairman, Annual Dinner Committee (cooperating with A.F.A. Dinner Committee), Luther Kleber, General Steel Castings Corp., Granite City, Illinois.

Chairman, Ladies' Committee, Mrs. C. B. Shanley.

Chairman, Publicity Committee, John W. Kelin, Federated Metals Div., American Smelting & Refining Co.

Chairman, Golf Committee, Roy Jacobsen, Carondelet Foundry Company.

Malleable Symposium A Convention Feature

THE feature of the malleable division program at the forthcoming Second Foundry War Production Congress to be held in St. Louis in April will be a symposium on melting. The symposium is being organized by the Program and Papers Committee of the division of which Carl F. Joseph, Saginaw Malleable Iron Div., General Motors Corp., Saginaw, Mich., is chairman.

The personnel of the subcommittee of the Program and Papers Committee directly responsible for organizing the symposium is composed of J. H. Lansing, Malleable Founders' Society, Cleveland, Ohio; F. L. Wolf, Chief, Graphite Allocation & Conservation, Branch "K," Materials Div., War Production Board, Washington, D. C.; R. J. Anderson, Belle City Malleable Iron Co., Racine, Wis.; and D. P. Forbes, Gunite Foundries Corp., Rockford, Ill.

The operation of various type malleable melting furnaces and the melting practices involved will be discussed. The type of furnaces for which papers are being prepared include the hand coal-fired, pulverized-coal-fired, and oil-fired air furnace and the open-hearth furnace. Included also in the symposium will be a discussion of air furnace-cupola and cupola-electric furnace duplexing, as well as the cupola as a malleable melting medium.

The malleable melting symposium is the second symposium to be organized by the malleable division recently. The first, presented at the 1942 Cleveland convention, dealt with graphitization and is available for easy reference as a complete pamphlet, for a nominal fee. Copies of the graphitization symposium are available at A.F.A. offices.

Since February, 1942, the Apprentice and Training Service of the War Manpower Commission has assisted an average of 1,100 establishments monthly to organize on-the-job short-term training and apprenticeship programs.

1942 Apprentice Patternmaking Contest Entries Mirror the Pattern Industry

By Frank C. Cech,* Cleveland, Ohio

For the past three years, the author has presented an article dealing with the results of the annual National Apprentice Patternmaking Contest sponsored by the A.F.A. Apprentice Training Commmittee, of which he is a member. The author also is interested in the contest as vice chairman of the A.F.A. Patternmaking Division and as a teacher of the art and science of patternmaking in the Cleveland Trade School. He not only has carefully analyzed the various entries in the contest but has asked foundries to produce castings from the entries, thus correlating patternmaking results with those obtained in the foundry, a feature missing in his previous excellent articles. Photographs for this article were prepared by Joseph Stribry.

THE annual patternmaking contests, conducted by the American Foundrymen's Association in co-operation with its local chapters and individual pattern shops and manufacturing establishments, involve a considerable expenditure of time and money. It is hoped that all who in any manner contribute to the success of these contests enjoy a personal satisfaction in the commendable results attained. The increasing popularity of the annual National contest exhibits, the interest displayed in the school shop demonstrations and growing attendance at apprenticeship and training sessions, are some of the readily apparent results. The present enormous training programs of national scope are a fitting testimonial to the foresight of the American Foundrymen's Association and kindred groups in establishing and maintaining apprenticeship and training committees who laid the foundation on which the present training structure has been built.

Contest Reviews

A review of the annual apprentice contests records the results obtained. It focuses attention on the apprentice's way of thinking when he is attacking the problem in hand, be that problem the making of a pattern or casting. It points out the mistakes made and possible remedies. It calls attention to the need for keener observation and deeper interest in what goes on about him, not only of that which concerns him at the time, but also of that which may serve as a stepping stone in the future.

When this review is followed by chapter meetings where both the pattern and molding contest entries are displayed and discussed, the value of the contest is immeasurably increased.

Mounting Interest

The interest of Cleveland industries in their local pattern contest was higher in 1942 than in 1941, despite apprentices having longer working days and executives straining under additional responsibilities of war times. The entries in the local contest sponsored by the Northern Ohio chapter in 1942 exceeded those of 1941 by 35 per cent. The interest in the National contest was even greater, as the number of entries for 1942 more than doubled those of 1941, and was much larger than the number of castings submitted in the molding contests. In scope, the National contest was quite broad, as entries covered an area ranging from Delaware in the east, to Missouri on the west, and from the Great Lakes region on the north to the southern boundary of Virginia.

Figure 2 shows the winning patterns and templets used in judging them. The templets were made of aluminum plate with center sections removed to make room for dowels. First and second prize patterns were made of mahogany, while the third prize pattern was made of white pine.

Industry Sees Its Reflection

The pattern equipment submitted in the 1942 National contest was as varied as the product of the patternmaking industry itself. This seems quite logical, as the contest patterns were made by apprentices who, as learners, absorbed the habits, methods and thinking processes of the shop and personnel of which eventually they became a counterpart. Continuing this trend of thought, it may be taken for granted that the submitted

Fig. 1—Many who attended the 1942 National meeting of A.F.A., closely inspected the entries in the Apprentice Patternmaking Contest.

*Head, Patternmaking Division, Cleveland Trade School, and Vice Chairman, A.F.A. Patternmaking Division.

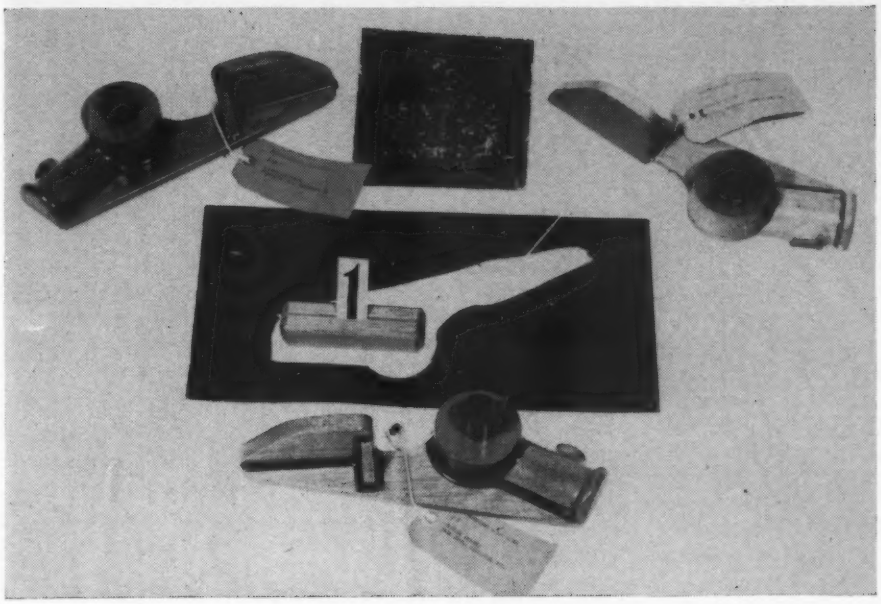


Fig. 2—Winning patterns in 1942 National Apprentice Patternmaking Contest and Aluminum plate templates used in judging them. Lower Center—First prize pattern. Upper Left—Second prize pattern. Upper Right—Third prize pattern.

patterns reflected the type of work turned out by the particular shop where the apprentice was employed and might classify the representative shops as follows: first, the pattern shop operated solely for profit, where little if any thought is given to the subsequent user of the pattern, or the foundryman and his problems; second, the pattern shop that considers quality workmanship and current foundry practice but is handicapped because of the customer's unwillingness to pay for quality work —with much persuasion the customer may consent to a fair pattern job; third, the pattern shop that, knowing its very existence depends on the foundry, serves it with the highest consideration and skill. The latter type shop, because of the high standard it has set for itself, attracts mainly jobs that require work within those standards. It is this type of shop that steadily improves foundry practices and helps to meet attempted inroads made by competing industries.

While these conclusions were drawn from the pattern equipment submitted in the 1942 contest, they might well have been deduced from previous contests sponsored by the A.F.A. Apprentice Training Committee.

The blueprint chosen by the A.F.A. committee for the 1942 contest (Fig. 3) represented a machine part that lacked the variety of molding possibilities contained in some of the choices of previous years. This made it comparatively easy for the contestants to decide the molding preference. The judges, however, found it more difficult to judge the patterns, as the scores allowed for molding were more equal and, consequently, accuracy and good workmanship played a more important part in the final scoring. A wide range of molding possibilities is desirable, as then more ingenuity, experience and resourcefulness are necessary to decide on the proper molding method.

Time Factor

The objection to a part that is ideal for contest purposes is the length of time it takes for its completion. The time taken to complete the pattern in the 1942 Cleveland local contest ranged from 10 hr. 55 min. minimum to 45 hr. 17 min. maximum, with an average of 23 hr. 3 min. In the National contest, the range was 4 hr. 45 min. minimum and 34 hr. maximum, while the average was 18 hr. 30 min. The local contest high rating was 92.6 per cent. The National contest high rating was 90 per cent. The local highest rated pattern was finished in less than average time (4 hours less). The correlation between the prize-winning pattern and most time consumed in making it is negative, *viz.*, the prize-winning pattern job is not the one that takes the longest time for completion. The committee has found it difficult to choose a project whose completion time would be confined to the eight hours suggested by various members in the past. A time study sheet, as depicted in the September, 1942, issue of *American Foundryman*, would

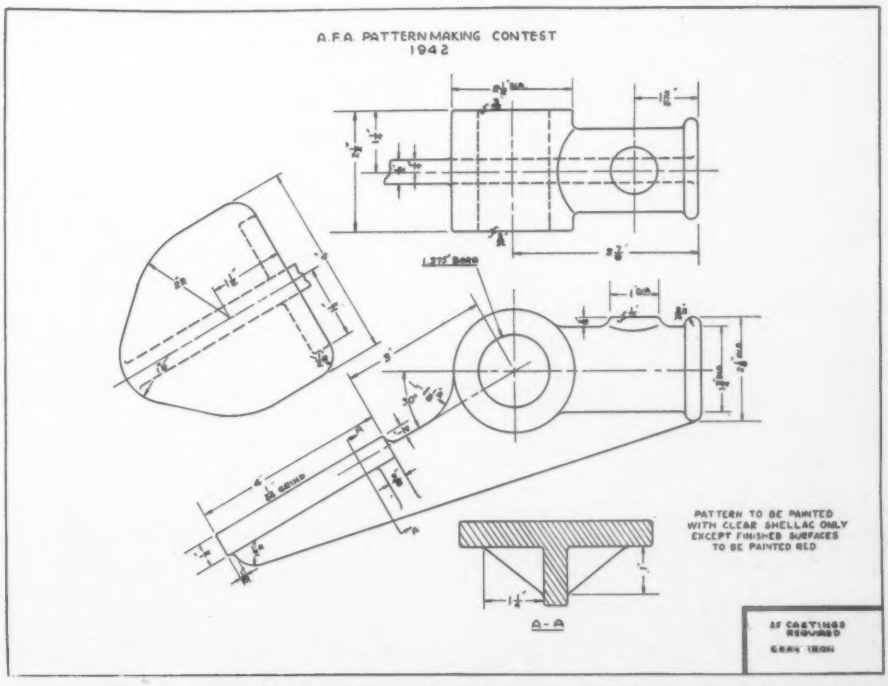

A.F.A. PATTERNMAKING CONTEST
1942
PATTERN TO BE PAINTED WITH CLEAR SHELLAC ONLY EXCEPT FINISHED SURFACES TO BE PAINTED RED
A-A

Fig. 3—Blueprint of machine part for which entries in the 1942 Apprentice Patternmaking Contest were made.

help to make the contestant time conscious and might improve the time consumed in making the pattern.

Molding Possibilities

In a logical planning sequence, the molding possibility of a pattern is second only to the visualization of the part to be made. The most common methods of molding suggested by the contest part are as follows:

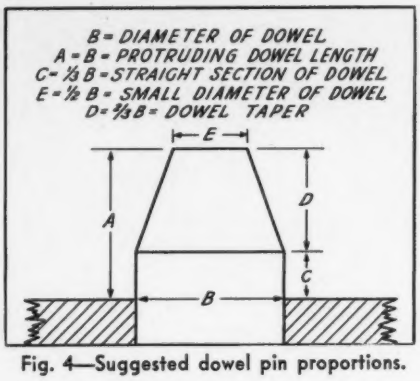
First Method

The making of a solid pattern. To mold this pattern it would be necessary (1) to use a follow board; (2) to use a false cope or a sand or plaster match; (3) cope down to the parting line after rolling the drag. This represents the cheapest kind of patternmaking, as it totally disregards the foundry planning where both time and money could be saved in addition to the production of a better casting. Work of this type should be discouraged. Its only justification is a one casting job to replace a broken part. Three such patterns were submitted in the 1942 contest.

Second Method

A split or parted pattern to facilitate its molding. A ready parting and an easy draw of the pattern is thus assured. Upwards of 28 such patterns were submitted.

Dowel Practice. It is well to stop at this point for a discussion of the doweling feature of a split pattern. In using dowels,


B = DIAMETER OF DOWEL
A = B = PROTRUDING DOWEL LENGTH
C = ⅓ B = STRAIGHT SECTION OF DOWEL
E = ⅓ B = SMALL DIAMETER OF DOWEL
D = ⅔ B = DOWEL TAPER
E
A
D
C
B
Fig. 4—Suggested dowel pin proportions.

the following should be considered:

1. *Number of Dowels.* Two or more dowels generally are used, depending on the size and shape of the pattern.
2. *Placement of Dowels.* Dowels should be placed at a maximum distance apart. Dowels of different sizes prevent the misplacement of pattern halves and aid in quick recognition of mating parts of the pattern. Dowels should be placed in the heavy sections of a pattern.
3. *Dowel Material.* Dowels may be obtained from pattern supply houses in malleable iron, aluminum and brass. The style may be of a screw or plate type, designed to suit the size of the pattern. Wooden dowel rod in maple or birch, ordinarily supplied in 3-ft. lengths from which lengths are cut to suit pattern thickness, is still the favorite means of doweling. Wooden dowels are quite satisfactory for the average pattern if certain principles are observed, since the dowel forming is a hand operation.

Figure 4 shows dowel proportions as found practical and as adopted as a rule-of-thumb standard. The proportions are arbitrarily set and might easily be altered somewhat without affecting the efficiency of the dowel.

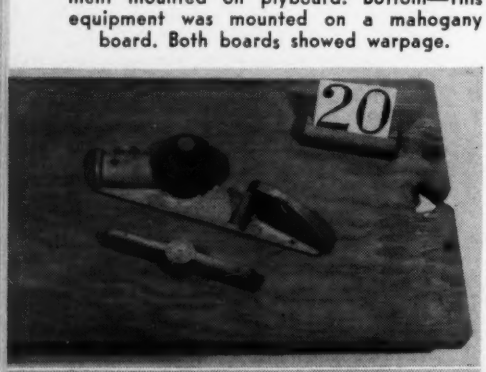
The purpose of the dowels is to keep the pattern sections (halves in this case) in a relative position until the mold has been rammed. The instant the cope begins to be drawn off the sections should start freeing themselves from each other. Tight or binding dowels hold the pattern sections together and tend to break the mold. Dowel holes, where conditions permit, should be bored or drilled through the stock as it facilitates removal of dowel for repair or for changes, and provides an easy means of clearing sand that falls into and/or sticks in the dowel hole so that the hole is eventually filled completely. Drilling of dowel holes through the stock applies both to patterns and core boxes. The ideal dowel is one having a short straight section with sufficient taper to act as a guide in placing mating parts together. Wood, being cellular, absorbs moisture and swells, a fact to be remembered.

Some of the common faults which occur in the sinking of dowels are mis-alignment that causes binding, dowels not screwed in deep enough because of failure to countersink for dowel collar or flange, and holes not bored deep enough to receive the full dowel.

Third Method

A plated pattern, the pattern halves being mounted one each on the drag and cope sides of a board or plate. Of this type of pattern equipment only two, shown in Fig. 5, were submitted in the contest. In the equipment shown in Fig. 5, bottom, the board was made of mahogany with end pieces of tongue and groove construction to prevent warping. The equipment in Fig. 5, top, was mounted on a plywood board. In the present aluminum crisis, much plywood is being used in the place of aluminum plates. While the plywood plate is stronger than solid wood, it, like mahogany plate, was slightly warped after being used in the foundry. The equipment in Fig. 5, top, was furnished with gates and runner (the runner is visible in the picture). It is the writer's belief that, where mounted patterns are submitted in a contest, they should be loose or easily removable for checking, otherwise there may be a shift showing in the casting that is diffcult to locate in the pattern equipment. No extra credit can be allowed for gating, as experi-

Fig. 5—Plated pattern equipment submitted in the patternmaking contest. Top—Equipment mounted on plyboard. Bottom—This equipment was mounted on a mahogany board. Both boards showed warpage.



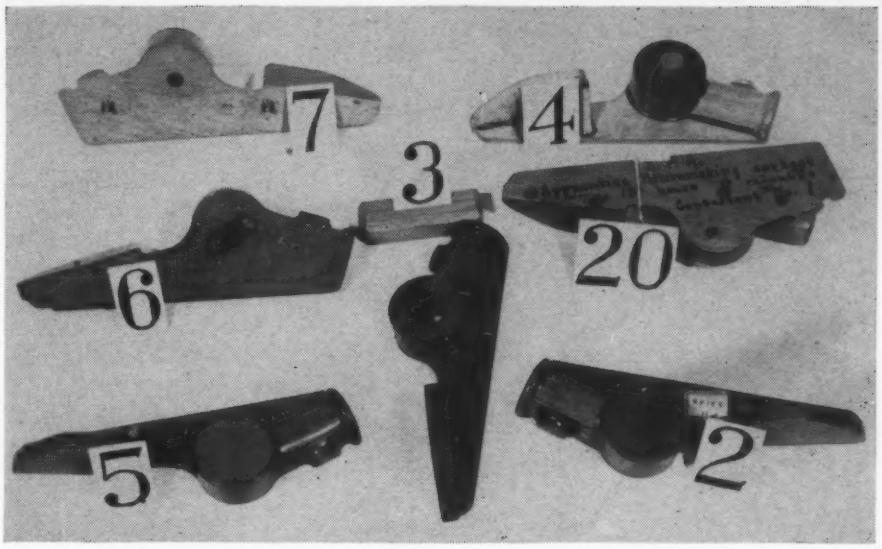


Fig. 6—Group of patterns chosen at random from those submitted in the contest.

ence shows that it is seldom that patternmakers, yes, even foundrymen, will agree on the gating of a pattern.

Coring the Boss

The notation on the blueprint "1.375 bore," brings to mind a lack of conformity in shop procedure. Some interpret the word "bore" as meaning to core the hole to a size that leaves sufficient stock for finishing or machining. Others, because of the tendency of a drill to run, or because of the possibility of a defect, such as a blow hole, sand inclusion or chilled surface, prefer to cast the boss solid and drill through the solid stock (See pictures 15, 16, 17). In the final analysis this, like many other features, must be left to the executive to decide, as it depends on the established policy of the shop. However, as a feature of the contest, the necessity of a quick decision is excellent training for the apprentice (and may it be added, also for the judges?).

Pattern Construction

Figure 6 shows a group of patterns, chosen at random from those submitted in the pattern contest.

A pattern may be analyzed for construction in several ways. However, the choice between methods of construction, in general terms, may be narrowed down as follows:

1. The pattern may be made entirely of one piece of wood by carving it to size and shape.
2. The pattern may be made by making the component parts individually, as web, stem, large boss, small boss, flange and rib, and assembling them.
3. Certains parts may be fashioned together and then assembled.

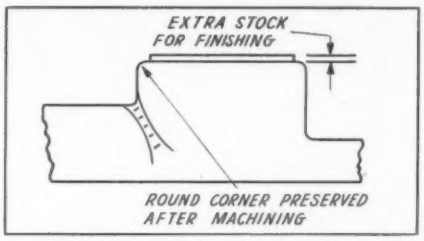


Fig. 7—Illustrating how the machine finish has been allowed on a pattern to take into consideration the rounded corners on the boss.

The web section of the pattern may be cut out of stock panel to thickness; cut from a piece made from narrow stock glued together to prevent warping and twisting; or a piece of stock of a fractional size of the outer profile of the pattern set into the flange and boss sections.

The large boss may be cut to profile after the stem of the pattern has been turned to size (this out of the same piece of stock). The small boss may be (1) carved out of a solid piece of wood integral with the large boss and stem of the pattern; (2) let into the stem section of the pattern and then worked to size and shape (see No. 2, Fig. 6, where this method is easily seen because of the contrasting colors of the wood); or (3) turned to size and partially to shape, fitted to the round contour of the stem and then finished to profile.

On pattern No. 4, Fig. 6, may be seen a short, stubby coreprint that makes it difficult to set the core so that a steady, upright position, while closing over, is maintained.

Pattern No. 5, Fig. 6, is a splendid piece of workmanship that has the finish amount turned back from the edge to provide a round corner after machining. (See Fig. 7.) This is a case in theory that does not work out

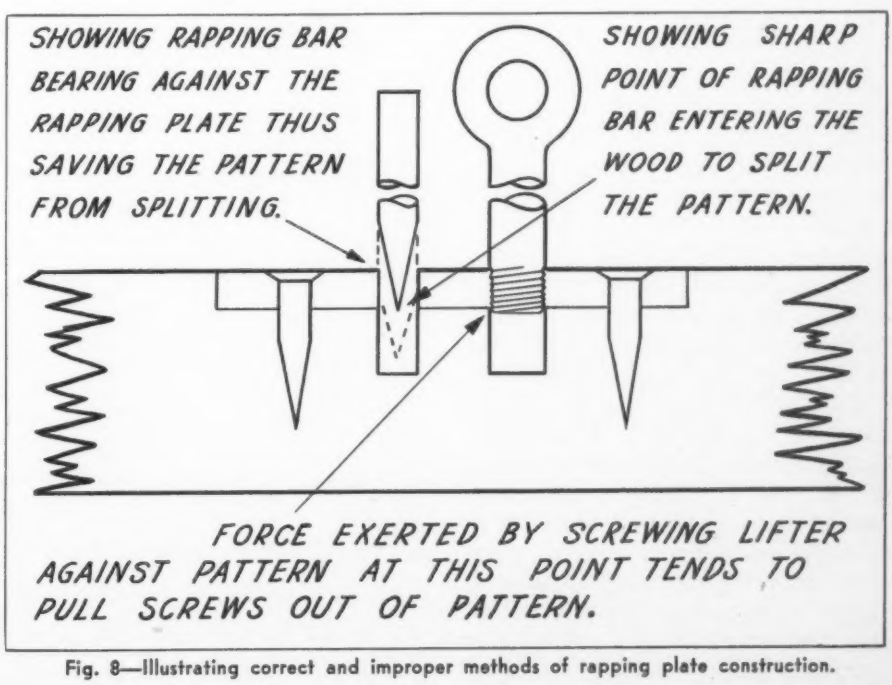

SHOWING RAPPING BAR BEARING AGAINST THE RAPPING PLATE THUS SAVING THE PATTERN FROM SPLITTING.
SHOWING SHARP POINT OF RAPPING BAR ENTERING THE WOOD TO SPLIT THE PATTERN.
FORCE EXERTED BY SCREWING LIFTER AGAINST PATTERN AT THIS POINT TENDS TO PULL SCREWS OUT OF PATTERN.

Fig. 8—Illustrating correct and improper methods of rapping plate construction.

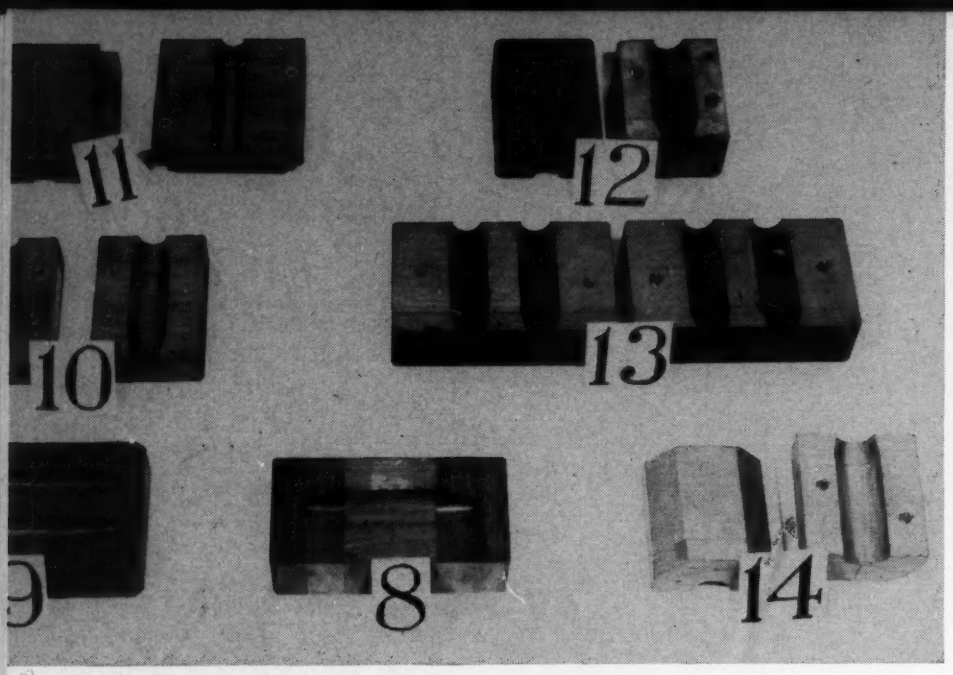


Fig. 9—Group of core-boxes submitted with pattern equipment entered in the contest.

well in practice. The slightest change in alignment while setting up the casting for machining on the part of the machinist causes the stock to be removed unequally, thereby causing part of the round corner to be removed. The result is a spoiled appearance or the necessity of a hand operation to remedy it.

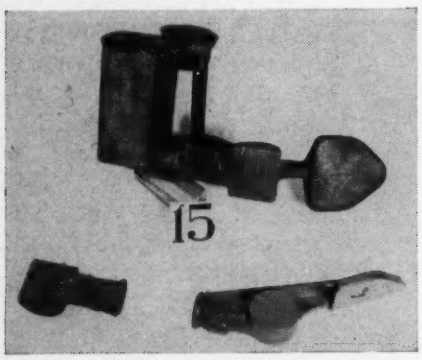


Fig. 10—Casting made from pattern 5, Fig. 6, sectioned through the boss. Note solidity of boss.

Pattern No. 6, Fig. 6, shows the correct method of providing relief for rapping and drawing spike. Fig. 8 shows a detailed drawing of this feature.

The large boss on the pattern, No. 7, Fig. 6, was turned with a dowel pin by which the boss was located and fastened in the web. The dowel may be seen coming through the web as a dark circle.

Pattern No. 20, Fig. 6, was included to illustrate how much better a pattern may be identified by marking than with tags that are tied around flanges and bosses. Every year, identification tags for patterns submitted in the National contest slip off, are removed, mislaid and lost, making recognition difficult and bothersome. If the contest pattern must be tagged, a small hole should be drilled through some member of the pattern and the tag string or wire passed through it and tied securely.

Core-Box Construction

There were many different types of core-box construction among the pattern equipment submitted for the contest based on economy, quality workmanship and coreroom practices. A group of core boxes from contest entries is shown in Fig. 9.

Box 8, Fig. 9, pictures a half-dump core-box from which a single core, necessitating two rammings and a pasting of the core halves to produce a whole core, may be made. The core-box is well constructed and proportioned.

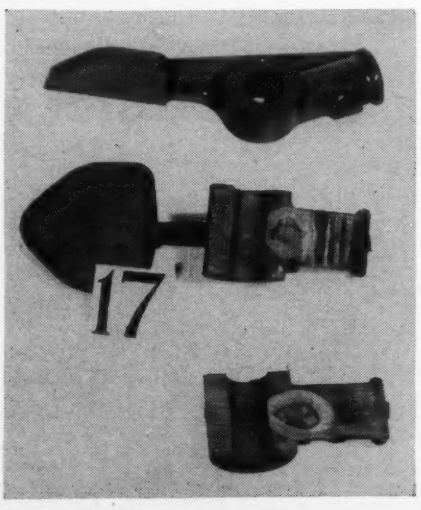


Fig. 11—Castings made from pattern 3, Fig. 6, which featured a green sand core. Note blow-hole close to cored section.

Box 9, Fig. 9, is constructed along the lines of box 8, but includes two half cores, which saves ramming and dumping time in the coreroom.

Box 10, Fig. 9, is a full split or parted core-box producing a full core at one ramming. Since it is difficult to stand the core on end during the baking process, it must either be furnished with a green sand frame for holding the green sand while drying the core, or the core must be rolled out on a green sand bed or core plate. The dowels are placed on one side of the core-box for booking purposes and show training for a production type of pattern work. The core-box could be improved by attaching a cleat or batten, as shown in box 11, to offset the blows of the coremaker's mallet. Box 10, beside being doweled in a better manner, also has better proportioned mating surfaces.

Box 12, Fig. 9, has poorly proportioned wood dowels placed in a narrow margin that should be increased for strength.

Box 13, Fig. 9, is well constructed and of proportionate strength. However, a box, such as this, is warranted only for production purposes. Box 14 is included because of the cut-away corners. This serves no good purpose and is likely to weaken the core-box, beside consuming unnecessary time in removing the corners. All core-boxes for full cores save venting and pasting time.

How Contestants Handled Coring

To determine the effectiveness of the various types of coring used in the patterns submitted in the contest, the patterns were taken to various Cleveland foundries and castings were made from them. The results of the author's attempt to correlate patterns with castings results are given in the following:

Pattern 5, Fig. 6, is a pattern having a solid boss. Figure 10 presents the casting made from that pattern at the Fulton Foundry & Machine Co., Cleveland. "Bill" Manwell, superintendent of the foundry, in giving the pattern to Marco Sclorski, a molder

for 35 years, simply said, "We would like to have a casting made from this pattern."

The casting, when sawed through the stem, brought out a fine-grained iron section. The casting was gated into the stem, the metal backing up into the heavy riser provided. There were no comments on the pattern from either Messrs. Manwell or Sclorski, other than that it was a "good" pattern.

The pattern marked 3, Fig. 6, has a green sand core. There was a doubt in the judges' minds as to the feasibility of a green sand job for 25 castings. Yet Joe Wych, a molder of 20 years' experience, working for the Forest City Foundries Co., Cleveland, took it as a part of the day's work and said that it was all right to mold it that way. "Bill" Feth, foundry superintendent, said that there would be no pattern changes for an order of 25 castings. However, both admitted that they would prefer a dry sand core.

Job Foundry Philosophy

In this statement may be seen the philosophy of a jobbing foundry—"a pattern has been received and, while we do not like the method of molding chosen by the patternmaker, we shall do our best to produce the required castings."

The casting, on being sawed, revealed a blow hole (Fig. 11) close to the cored section. Whether this is a result of the green sand core or not, is left for the reader to decide. The iron appears uniform, of compact grain and readily machinable. The casting was gated into the rib section and a riser taken off the stem end.

A straight drag and a full tapered cope coreprint (Fig. 12—1) on the third prize pattern, shown with the resulting casting in Fig. 13, brought forth the remark, "Why don't they put fillets around the coreprints?"

The speaker was Frank Feltes, pattern shop superintendent, Allyne-Ryan Foundry Co., Cleveland. Dan Ryan, a seasoned foundryman known the country over, added, "Yes, that not only improves the molding but also removes the possibility of the chilled corner surface found so objectionable in the machine shop." The casting produced from the pattern was of a close-grained, soft iron produced by John Gallina, another molder of some 20 years' experience.

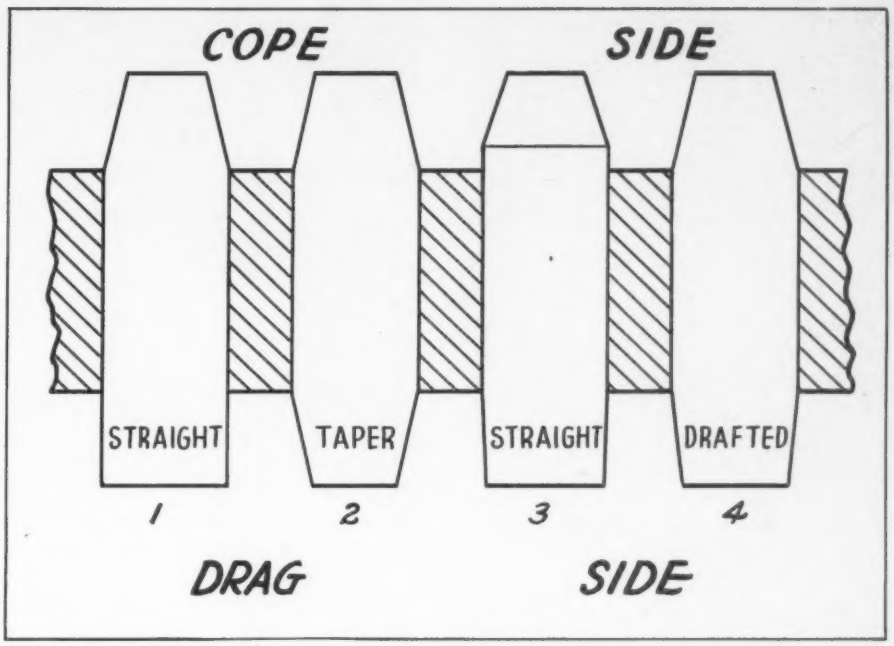


Fig. 12—Types of coreprints used on patterns submitted in the contest.

Another pattern had both the drag and cope coreprints tapered. This is ideal for production work where the core is reversible, as no time is lost in setting the core (Fig. 12—2).

A dry sand core with a straight drag coreprint section and a cope coreprint, having a straight shoulder and tapered section, was also included in the entries. The set core is guided into place in coping over, the straight section securing proper alignment. For unfinished holes or for cores cutting through an unfinished surface, this method produces a straight and accurate opening. Fig. 12—3 illustrates this type core.

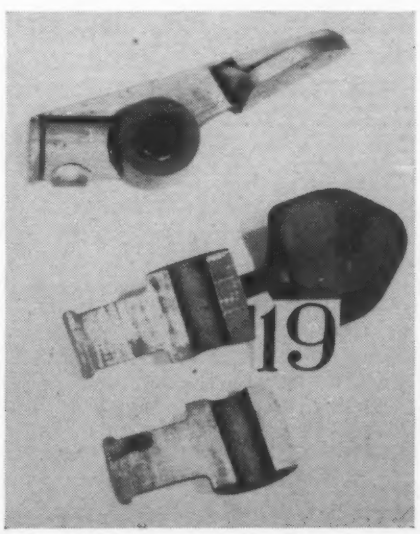


Fig. 13—Third prize pattern and casting made from it.

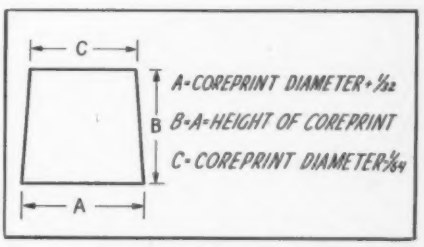


Fig. 14—Suggested standard for coreprint proportions. These proportions hold for coreprints up to 2-in. diameter, then "B" diminishes proportionately.

Figure 12—4 shows a heavily drafted (not enough slant to be called a taper) drag coreprint, with a tapered cope coreprint. For ordinary patterns, this is unnecessary and expensive, since it must be compensated for in the corebox. Much correspondence on the subject of coreprints, both as to size and draft, failed to produce an easily applied standard. The rule-of-thumb standard drag coreprint proportions shown in Fig. 14 were evolved to provide an acceptable standard for teaching purposes. It has been tried and found practical, at least in the teaching of patternmaking.

Inquisitiveness prompted the writer to have castings made

Fig. 15—Casting made with pattern equipment shown in Fig. 5—top.

Fig. 16—Casting made from pattern equipment shown in Fig. 5—bottom.

from the mounted or plated patterns, with the following results:

Figure 15 presents a casting made from the equipment shown in Fig. 5, top. It was made by Anton Zelinski, a second-year apprentice, commonly termed a "young timer" in the Northeastern Ohio Chapter of the A.F.A. The sawed cross-section presents a dense soft iron. "Bill" Goebert, superintendent, Bowler Foundry Co., was pleased with the molding of the pattern, and the fact that a young molder made the casting. The casting, however, did show a slight shift.

Figure 16 shows a casting made from the equipment of Fig. 5, bottom, by one of the youngest "young timers," as he was attending classes at Cleveland Trade School in a pre-apprentice course. "Jim" Goldie, foundry instructor at the school, says that "Jim" Bialkowski found the moldability to be good. On close scrutiny of the casting, a blow hole may be seen appearing as a trapped gas pocket in the stem of the casting. The metal cross-section is close-grained of good machinable quality. These last two castings were gated into the web section of the pattern.

General Comments

Corners on coreboxes should be chamfered to prevent splitting.

Forgotten finish allowances or dimensional mistakes should not be added by 1/16 in. or 1/8 in. pads or bosses, as these peel or splinter off. The pattern should be cut back to allow a larger amount of stock to be added.

Some of the patterns had the extent of the finish allowances shellacked on the edges of the boss, which is unnecessary.

The old "bugbear" backdraft is still with us, as several flange sections were so judged—losing points for the contestants.

Fillets on machine parts, where they do not interfere with accuracy, may be larger but should not be smaller than specified.

Patterns were made of pine, mahogany and cherry.

Plywood and speed screws brought the contest up-to-date.

Conclusion

If some features of the contest seem to have been overplayed in this article, it is because those features have been recurring over a period of time and the writer felt that it would help to remedy them, or at least forcibly bring them to the attention of those most concerned.

It is gratifying to find our members ever ready to assist, as was the case in making the castings from the contest patterns, which is in keeping with our motto:

"Coming together is a beginning,
Keeping together is progress,
Working together is success."

Frederick J. Dunkerley recently has joined the research staff of Battelle Memorial Institute, Columbus, Ohio. Mr. Dunkerley has been assigned to war research in metallurgy.

Apprentice Contest Patterns Going Out

PATTERNS for the 1943 A.F.A. National Apprentice Contests now are being sent out, Association Secretary R. E. Kennedy states, and from now on will be routed from plant to plant wherever apprentice entrants are located. The contests are well under way, and will culminate in final judging of entries at the Second War Production Foundry Congress in April in St. Louis.

Secretary Kennedy has announced that entries still are invited from individual plants wishing to enter apprentices, as well as those located in sections where local "run-off" contests are held. Officers and directors of A.F.A. chapters are actively cooperating in these contests and sponsoring local competitions, the winners of which will be sent to St. Louis as entries in the final judging.

The immediately preceding article in this issue presents a critical analysis of the pattern entries submitted in the 1942 contest, which should be of value to those participating in the 1943 competitions.

Maintaining Flow of Data to Armed Forces

THE National Office of your Association is called upon frequently to supply to various divisions of the armed forces and to government bureaus and commissions, information regarding the castings industry and production of cast products. Considerable time is required in answering such requests.

Such publications as the Cast Metals Handbook, Safety Codes, Recommended Practices and Preprints dealing with specific phases of foundry operations, foreman and apprentice training, cost practices, time study and job evaluation, and other subjects, have been supplied in quantity.

This service has helped to keep the castings industry and your Association in the attention of various government and service organizations.

To Discuss Cast Iron As Engineering Material

THE Gray Iron Division of your Association, through the efforts of its Committee on Program and Papers headed by F. J. Walls, International Nickel Co., Detroit, Mich., is organizing a symposium on cast iron as an engineering material to be presented at the forthcoming war production congress to be held in St. Louis in April. R. G. McElwee, Vanadium Corp. of America, Detroit, and War Production Board, Washington, D. C., a member of the committee, has been placed in direct charge of this project. The symposium will cover such subjects as specifications, testing methods, properties, and applications.

In view of the recent interest in the possible use of cast iron at higher temperatures than 450°F. and the study of these possibilities by the War Metallurgy Committee, to which the A.F.A. Gray Iron Division Committee on High Temperature Properties of Cast Iron is acting in an advisory capacity, this symposium is very timely and should be of great interest to gray iron foundrymen at the Congress.

2d Annual Lecture Course of Chicago Chapter Begins Feb. 3

FOLLOWING the success of the lecture course held last year, the Chicago Chapter has announced a 1943 Foundry Lecture Course, to begin Wednesday, February 3. This course will comprise the second year of an intended four-year educational program designed for apprentices, foundrymen and salesmen, and all interested in better castings.

The course will be given as a series of six lectures, held every other week from February 3 to April 14. Reservations may be made through J. C. Thomas, Whiting Corp., Harvey, Ill., Secretary of the Lecture Course Committee. J. F. Lottier, Peoples Gas Light & Coke Co., Chicago, is Chairman of the committee.

All lectures will be handled as panel discussions with the chairmen of the various sessions acting as leaders. Where the first year of the program covered more or less fundamental aspects of foundry practice, melting and the proper use of foundry refractories will be emphasized in this year's course.

Men of broad experience in foundry work will conduct the sessions as technical chairmen. All lectures will be conducted Wednesday evenings at 7:15 p.m., in the auditorium of the Peoples Gas Bldg., 122 S. Michigan Ave., Chicago.

Enrollments will be accepted for the entire lecture series, or for individual lectures in advance of each meeting date. Because of present shortages of skilled men, and the importance of training for war work, it is expected that plant enrollments of key men will be even greater than last year. An outline of the 1943 Lecture Course is shown below.

Aluminum-Magnesium Advisory Group Meets

MEMBERS of the Advisory Committee of the newly organized A.F.A. Aluminum and Magnesium Division met January 29 at the Hotel Cleveland, Cleveland. Under leadership of Dr. N. E. Woldman, Eclipse Aviation Div., Bendix Aviation Corp., Bendix, N. J., the committee discussed organization of the various committees of the division, and formulated plans for future activities.

In addition to Dr. Woldman as chairman, the present complete personnel of the Advisory Committee is as follows:

J. G. Frost, Aluminum & Magnesium Corp., Sandusky, Ohio; Dr. B. Egeberg, International Silver Co., Meriden, Conn.; A. W. Stolzenberg, Aluminum Co. of America, Detroit; Dr. J. T. Eash, International Nickel Co., Bayonne, N. J.; J. B. Neiman, Federated Metals Div. of American Smelting & Refining Co., Detroit; H. J. Deutsch, American Magnesium Corp., Buffalo, N. Y.; H. G. Lamker, Wright Aeronautical Corp., Paterson, N. J.; A. T. Ruppe, Bendix Products Div. of Bendix Aviation Corp., South Bend, Ind.; W. E. Martin, Sperry Gyroscope Co., Brooklyn, N. Y.

H. J. Rowe, Aluminum Co. of

Chicago Chapter Foundry Lecture Course

SCHEDULE OF LECTURES

Lecture No. 1—February 3

"Melting Methods and Equipment—All Types."
Technical Chairman, A. W. Gregg, Whiting Corp., Harvey, Ill.

Lecture No. 2—February 17

"Cast Iron and Malleable Iron Melting Practices."
Technical Chairman, C. E. Mate, Greenlee Foundry Co., Chicago.

Lecture No. 3—March 3

"Steel Melting Methods and Equipment."
Technical Chairman, L. H. Hahn, Sivyer Steel Castings Co., Chicago.

Lecture No. 4—March 17

"Non-Ferrous Melting Practices."
Technical Chairman, Chester L. Faunt, Christensen & Olsen Foundry Co., Chicago.

Lecture No. 5—March 31

"Refractories for Furnaces."
Technical Chairman, John Owen, Harbison Walker Refractories Co., Chicago.

Lecture No. 6—April 14

"Ladle Refractories and Ladle Practice."
Technical Chairman, Grif Kennelley, General Refractories Co., Chicago.

America, Cleveland; C. C. Hitchcock, R. C. Hitchcock & Sons, Minneapolis; Leslie Brown, Magnesium Fabricators Div. of Bohn Aluminum & Brass Corp., Adrian, Mich.; B. D. Claffey, Gray Iron & Aluminum Div. of General Malleable Corp., Waukesha, Wis.; Geo. H. Starmann, Apex Smelting Co., Chicago; Hiram Brown, Frontier Bronze Corp., Niagara Falls, N. Y.; C. E. Nelson, Dow Chemical Co., Midland, Mich.; R. E. Ward, Eclipse Foundry Div. of Eclipse Aviation Co., Bendix, N. J.; M. E. Brooks, Dow Chemical Co., Bay City, Mich.; and Dr. Robt. Thomson, Dodge-Chicago Plant, Chrysler Corp., Chicago.

War Problems Groups Formed By Birmingham and Wisconsin

TO COPE with an ever-increasing variety and number of problems arising out of our war effort, the Wisconsin and Birmingham Chapters of A.F.A. have announced formation of War Problems Committees. Thus, to date, a total of 14 Chapters of the Association have appointed special committees to advise local foundrymen on questions involving materials, restrictions, and substitutions, governmental regulations, and the like.

Chairman of the Birmingham war problems committee is Dr. Jas. T. MacKenzie, American Cast Iron Pipe Co., Birmingham. For the Wisconsin group, Wm. J. MacNeill, Federal Malleable Co., Milwaukee, will serve as chairman. While the Southern chapter has not yet announced the full committee personnel, other members of the Wisconsin committee are as follows:

Gray Iron—W. F. Bornfleth, Cutler-Hammer, Inc., Milwaukee; John A. Leisk, Allis-Chalmers Mfg. Co., Milwaukee; E. L. Roth, Motor Castings Co., West Allis, Wis.; L. V. Tuttle, Koehring Company, Milwaukee.

Malleable Iron—R. J. Anderson, Belle City Malleable Iron Co., Racine; C. A. Gutenkunst, Jr., Milwaukee Malleable & Grey Iron Works, Milwaukee.

Non-Ferrous—Roy M. Jacobs, Standard Brass Works, Milwaukee; V. C. Mekeel, Ampco Metal, Inc., Milwaukee.

Steel—A. T. Baumer, Wehr Steel Co., Milwaukee; Carl F. Haertel, Falk Corp., Milwaukee.

St. Louis Adds Members

Announcement also has been made by the St. Louis District Chapter that Chapter Vice-Chairman L. V. Kleber, General Steel Castings Corp., Granite City, Ill., is serving as Vice-Chairman of that chapter's War Problems Committee. Secretary-Treasurer J. H. Williamson, M. A. Bell Co., St. Louis, is acting in similar capacity for the group.

A.F.A. and I.B.F. to Continue Exchanges

MARKING the 22d continuous year that the two associations have exchanged papers for their annual meetings, the American Foundrymen's Association and Institute of British Foundrymen once more will exchange in 1943. This friendly arrangement, begun in 1921, is the oldest foundry group exchange in existence today, and has aided industrial good will between the two countries.

The 1943 exchange paper from the I.B.F. will be authored by J. W. Gardom, Birmingham, Oliver Stubbs medalist and very prominent in the technical work of the British association, serving as chairman of the Technical Committee. Mr. Gardom's paper will deal with a timely subject, "Quantity Production of Manganese Steel Castings." The paper will be presented at the Foundry Congress in St. Louis, April 28-30.

C. W. Briggs, Technical Advisor, Steel Founders Society of America, Cleveland, is preparing the A.F.A. exchange, on the subject of "Hot Tears in Steel Castings." Thus both papers will deal with one of the most important cast metals for war production.

Mr. Briggs is well known for his technical work on cast steel, having devoted a great deal of study to his present subject, both in his present capacity and in earlier work at the Naval Research Laboratory. He also is an A.F.A. medalist.

Announcing a Special Pre-Convention Issue

ON THE following four pages of this issue will be found a special announcement pertaining to the April or Pre-Convention issue of *American Foundryman*, of interest to all Association members. In this issue, for the first time, will appear advertising of those whose products serve the Foundry and Allied Industries in the production, machining and finishing of cast metals.

Thus the April issue, containing the complete program of the 2nd War Production Foundry Congress in St. Louis, will hold more than the usual interest. By giving exhibitors an opportunity to bridge the gap between Foundry Shows, it will be of permanent value to operating executives as a special directory of manufacturers and suppliers of equipment and materials.

The Pre-Convention issue will be distributed not only to A.F.A. members but also to a carefully selected list of 5,000 additional top operating executives of foundries throughout the U. S. and Canada.

Howard Coonley, formerly chairman of the Board of the Walworth Company, which operates several foundries, has been appointed director of a new Conservation Division of WPB. Mr. Coonley is well known to the foundry industry, his company having been actively interested in A.F.A. activities for a number of years.

The Muskegon Piston Ring Co., Muskegon, Mich., recently has published a brochure which pictorially describes the engineering, manufacture and control of piston rings manufactured by that company.

A Special A.F.A. SERVICE

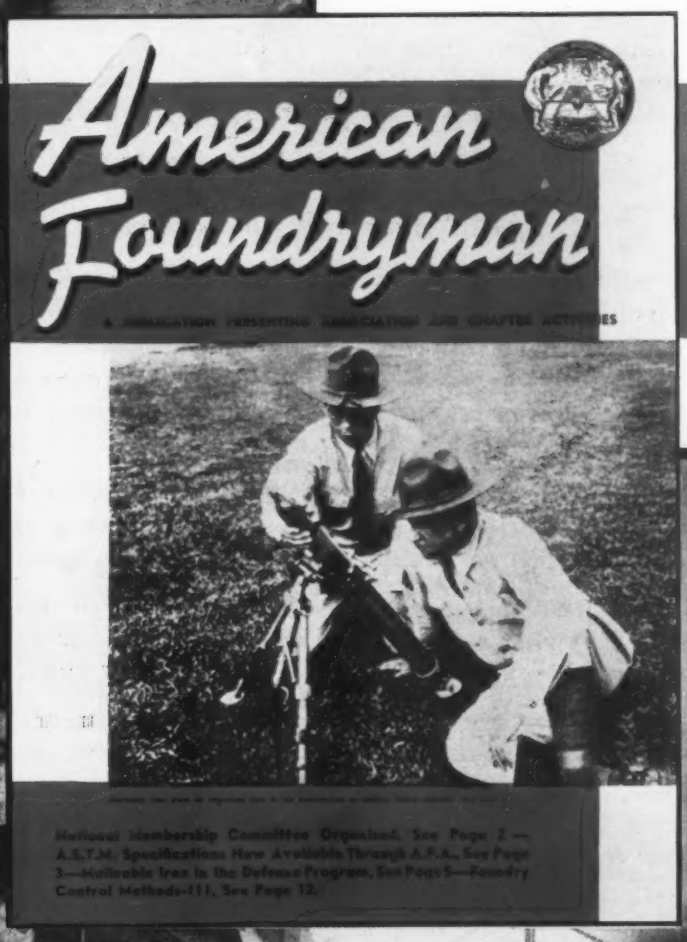
Presented
in connection with the

Second

War Production Foundry Congress

•

ST. LOUIS, MISSOURI
APRIL 28-30 • 1943



PLEASE READ THESE PAGES CAREFULLY

SPECIAL ANNOUNCEMEN

in the PRODUCTIO
of CASTING

ADVERTISING Accepted

On every battlefront throughout the World, CASTINGS HAVE GONE TO WAR!

Because castings are as vital to every phase of war production as in every action of our Armed Forces, A.F.A. staged the 1st War Production Foundry Congress in April 1942. That event, to stimulate "Increased Production," helped mobilize the entire Foundry Industry for a tremendous task.

The 2nd War Production Foundry Congress will be held at St. Louis in April 1943 . . . this time to meet urgent military requirements for cast metals — *on time.* The value of this Congress to the industry will be enhanced by a Special A.F.A. Service:

Advertising will be accepted in the Pre-Convention (Program) issue of "*American Foundryman*"

No industry is doing more in the Allied war effort than the Foundry Industry. None needs more information on technical application of machines, materials and processes. Many a vital technical problem will be solved at this Congress — and many a perplexing equipment and supplies question can be answered through the Advertising pages of "AMERICAN FOUNDRYMAN."

The Congress will offer up-to-date information on "HOW to make quality castings" . . . the Advertising sections should present the most modern developments in "WHAT to make them with."

Authoritative technical data will be presented during the Congress . . . extensive equipment and materials can be displayed in the Advertising pages of "AMERICAN FOUNDRYMAN."

With limited time available, only direct foundry processes can be covered during the Congress . . . Advertisers in the Pre-Con-

0,000 CIRCULATION GUARANTEED

THE MEN WHO SAY

READ "AME

Front Cover—Official U. S. Navy Photo

N *To Those Whose Products SERVE*

IC MACHINING and FINISHING

NC

te "AMERICAN FOUNDRYMAN"

NVENTION ISSUE (APRIL 1943) ONLY

vention issue, however, may deal with every phase of *Production*, *Machining* and *Finishing* of castings.

Through personal contacts, higher production standards will be developed at the Congress . . . through Advertising in "AMERICAN FOUNDRYMAN," contacts with products and services will point the way toward increased plant efficiency.

For years the Foundry Shows, sponsored and staged by A.F.A., have been considered a major medium for presentation of worthwhile materials and equipment to the Foundry and Allied Industries. In 1943, a non-exhibit year, Advertising in "AMERICAN FOUNDRYMAN" can be made an important link in continuous contact with the men who make, process and use cast metals.

As the *only* Association representing the entire Foundry Industry, the activities of A.F.A. are directed solely toward production of more and better castings. Today these activities are more essential than ever before. For their support the Association looks to those whose interests run parallel to the Castings Industry, in wartime as in peace time.

Manufacturers and Suppliers of Equipment and Materials are invited to be represented in the Pre-Convention issue of "AMERICAN FOUNDRYMAN."

The Pre-Convention issue of "AMERICAN FOUNDRYMAN" will be distributed at the 1943 Foundry Congress, to the entire A.F.A. membership of over 5,000 individuals (80% of them management and operating executives), and to some 5,000 other selected executives who control production and purchases of equipment and supplies. Thus A.F.A. guarantees a minimum, personally-directed circulation of 10,000 copies of the Pre-Convention issue . . . containing special Advertising material directly related to the *Production, Machining* and *Finishing* of cast metals.

AN EXHIBITOR SERVICE IN A NON-EXHIBIT YEAR

Y IR FIRMS SHOULD BUY

AME UNDRYMAN"

An Advertising Policy Entirely Consistent with A.F.A. Traditional Exhibit Policy

Special attention is called to the fact that all advertisements in the Pre-Convention (Program) issue of "AMERICAN FOUNDRYMAN" will be confined to Full Pages and 2-Page Spreads (no more than 2 pages to any one advertiser). Thus, while full opportunity to advertise products and services is afforded, "space competition" is reduced to a minimum . . . a point all advertisers will appreciate. This provision is entirely in keeping with the traditional A.F.A. exhibit policy of arranging, insofar as possible, Foundry Shows with uniform general appearance. It is a policy traditionally American as well, since it affords:

Equal Opportunity To All — Special Advantage To None

IMPORTANT NOTICE!

Complying with the government's request to conserve paper, "American Foundryman" will reduce its page size, effective with the April, 1943 issue, to conform with many other trade and technical publications. The new overall page size will be 8⅛ x 11¼ inches. The size of bleed advertising pages to conform.

ADVERTISING REQUIREMENTS

General: "AMERICAN FOUNDRYMAN" is published monthly *without* advertising. Advertising accepted *only* in Pre-Convention issue, April 1943. All copy and cuts subject to approval of American Foundrymen's Association.

Rates: No "special" or "preferred" positions sold, such as covers, ads facing reading pages, inserts, etc. No more than 2 full pages (facing or separate) sold to any one advertiser. Less than full page advertisements, not accepted.

Single page, Black & White, $140.00.
2 facing pages, Black & White, $250.00.
2 separate pages, Black & White, $140.00 each.

Color: Available on all advertising pages, at $25.00 extra per page per color.

Bleed: Available on all advertising pages, $10.00 extra per page per color.

Mechanical: Overall trim page size of issue, 8⅛ x 11¼ inches; type page size, 7 x 10 inches. Single page ad copy, non-bleed, 7 x 10; single page, bleed, 8¼ x 11½; 2-page spread, non-bleed, 7 x 10, each page; 2-page spread, bleed, 8¼ x 11½, each page.

Cuts: Haltones, Zincs and Electros may be used. Halftones should be 120 line screen. All plates should be wood mounted, securely tacked all around. Reproduction of solid reverse plates, heavy borders or advertisements with unusually heavy solid portions, cannot be guaranteed. All repairs due to damage in packing or shipping plates must be assumed by the advertiser.

Closing Dates: March 1st for all advertisements requiring type setting and submission of proofs; March 10th for advertisements in plate form. Final closing date for issue, March 15.

Agency Discount: None.

Mail All Space Reservations to:

American Foundrymen's Association

222 WEST ADAMS STREET — CHICAGO, ILLINOIS

Down-Grading Chart for Brass and Bronze Specifications Issued by WPB

By Carter S. Cole,* Washington, D. C.

REAL conservation can be effected by specification changes based on a critical engineering examination of end use. The primary objective of this work is a better utilization of available material for maximum efficiency in war effort. Numerous L and M orders have shut off copper, tin and other scarce materials from non-essential civilian purposes. Even with this, taking the picture as a whole and more specifically referring to the primary metals, we do not have sufficient for our direct and indirect military needs and for items directly concerned with health and safety.

Specifications Reviewed

When copper, tin and other metals were cut off from their civilian uses, some of the normal channels in which these materials regularly flowed were closed. As a consequence lower grades of secondary material are relatively much more available than primary metals. Brass mill scrap on the other hand has been routed back to the brass mills for reprocessing. In normal times, copper clippings and similar high purity scrap were used to sweeten, or upgrade, casting alloys. So the ingot makers and the foundrymen have had to work with materials having higher impurities than those to which they were accustomed.

In this connection, specifications have been carefully reviewed by Army, Navy and Federal Specification Committees, the American Society for Testing Materials, and the Society of Automotive Engineers. Others, too, have cooperated, including many of our largest industrial companies that write their own specifications.

In liberalizing specifications, requirements for virgin metal have been removed, impurity limits have been raised, and specifications for new alloys written so that material currently available could be used to better advantage. The materials engineer has thus given the designing engineer the tools with which he may work. It is the designing engineer's responsibility from here on to make use of these tools in the most effective manner possible.

Guide for Materials Use

The accompanying chart can serve as his guide and the table below it gives a ready cross-reference to the applicable approximately equivalent specifications.

The chart shows most of the important specifications grouped in columns according to the material required by an ingot maker or foundryman. Four classifications are given. "All New Metal" includes No. 1 and No. 2 copper as well as electrolytic. "High Purity Secondary" is exemplified by such items as fired cartridge cases, currently used to make regular manganese bronze.

In any specification where the lead is equal to or greater than the tin, the tin content of bronzes can generally be introduced into the alloy from secondary sources, such as sweated or unsweated radiator cores. Lead is generally the contamination of our secondary supply that restricts the use of material in our tighter specifications. Such, in general, are the considerations governing our source of supply of material to make the various grades of brass and bronze castings.

Responsibility of Designers

The designer, in the past, has given little or no thought to conservation but has specified the best material for the purpose intended. Composition "G", or Gun Metal, has many important and traditional uses. In peace times, when our supply of raw materials was unrestricted, there could be little criticism of a designer who specified this excellent metal for many and varied uses.

Today, however, the 0.2 or 0.3 per cent max. lead in specifications for this bronze places it in a class requiring primary copper and tin for its manufacture. Now the designer must revise his thinking and specify the least restrictive material that will do the work at hand.

As indicated on the chart, in many instances Composition "M", or even 85-5-5-5, will give adequate service performances for many items where Composition "G" has been specified. The Armed Services are recognizing this and have made many specification changes of this nature which conserve primary metal.

Possibilities in 85-5-5-5

The Navy, for instance, last spring issued a directive permitting the use of Composition "M" in place of Composition "G" in pressure castings. The Maritime Commission has changed propeller shaft sleeves from "G" to "M", an alloy on which the Navy had standardized for this purpose.

More recently the Navy has pointed out the possibilities of the use of 85-5-5-5 for Composition "M", Composition "G" or silicon bronze for sea water valves and fittings. It might also be noted that where structural strength is the primary consideration leaded manganese bronze is an excellent design choice, in place of Composition "G", silicon bronze or aluminum bronze.

There are times, of course, when a partial or full substitution of ferrous metal may be made for some of the non-ferrous alloys—even in some uses directly or indirectly connected with our war effort. Such, for instance, is the current use of malleable iron tail-pieces for fire hose couplings that formerly

*Chief, Metals Section, Specifications Branch, War Production Board.

Down-Grading Chart for Brass and Bronze Castings Showing Specifications and Material Requirements

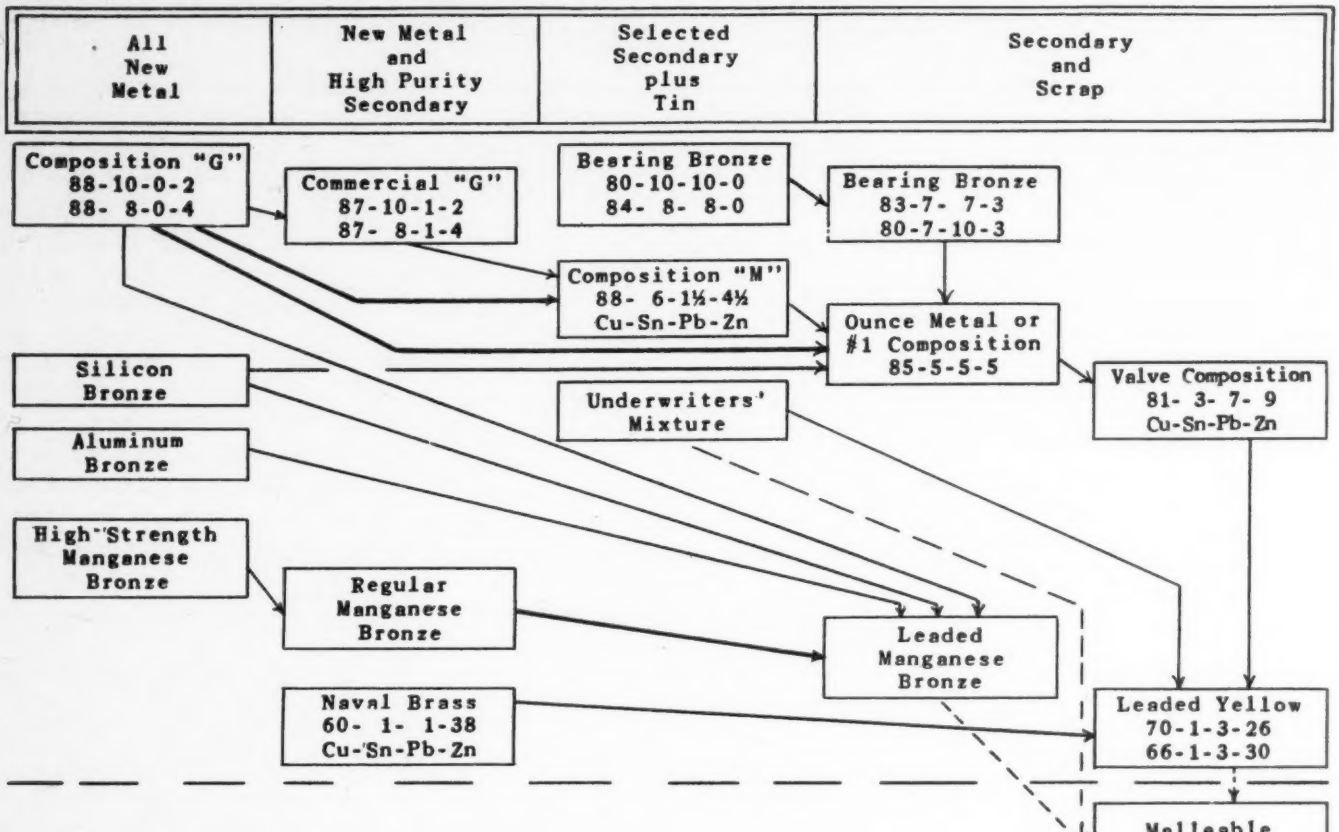

All New Metal
New Metal and High Purity Secondary
Selected Secondary plus Tin
Secondary and Scrap
Composition "G" 88-10-0-2 88- 8-0-4
Commercial "G" 87-10-1-2 87- 8-1-4
Bearing Bronze 80-10-10-0 84- 8- 8-0
Bearing Bronze 83-7- 7-3 80-7-10-3
Composition "M" 88- 6-1½-4½ Cu-Sn-Pb-Zn
Ounce Metal or #1 Composition 85-5-5-5
Valve Composition 81- 3- 7- 9 Cu-Sn-Pb-Zn
Silicon Bronze
Underwriters' Mixture
Aluminum Bronze
High Strength Manganese Bronze
Regular Manganese Bronze
Leaded Manganese Bronze
Naval Brass 60- 1- 1-38 Cu-Sn-Pb-Zn
Leaded Yellow 70-1-3-26 66-1-3-30
Malleable Iron

Chart prepared by
Specifications Branch
Conservation Div., W.P.B.

SPECIFICATIONS					
ALLOY	ASTM	ARMY & FEDERAL	NAVY	AMS	SAE
Composition "G"	B 143, 1A & 1B B 60	QQ-B-691a - 5	46M 6g "G"	4845 A	62
Commercial "G"	B 143, 2B E-B 143, 2X	QQ-B-691a - 6	46B 5h "P-c"		
Composition "M"	B 143, 2A B 61	QQ-B-691a - 1	46B 8g "M"		
85-5-5-5	B 145, 4A B 62	QQ-B-691a - 2	46B23c "Oz-c"		40
81-3-7-9	B 145, 5A	QQ-B-691a -11	46B24d		
80-10-10	B 144, 3A			4842	64
84- 8- 8	E-B 144, 3Y	QQ-B-691a - 8	46B22d "II"		
83- 7- 7-3	B 144, 3B	E-QQ-B-691a - 8			660
80- 7-10-3	E-B 144, 3X				
Naval Brass	B 146, 6C	QQ-B-621 - A	46B10f "N-c"		
70- 1- 3-26	B 146, 6A E-B 146, 6X & 6Y	E-QQ-B-621 X & Y	46B11 (INT)		
66- 1- 3-30	B 146, 6B	QQ-B-621 - B	46B11 (INT)		41
Silicon Bronze		QQ-C-593	46B28 (INT)		
Aluminum Bronze	B 148, 9A & 9B	QQ-B-671a	46B18c		68
Underwriters' Mixture		WW-C-621a	34F 3c		
H. S. Manganese	B 147, 8B	QQ-B-726b B & C	46B29 "MA-c"	4862	
Regular Manganese	B 147, 8A	QQ-B-726b - A	49B 3e "Mn-c"	4860	43
Leaded Manganese	B 147, 7A	E-QQ-B-726b - A			

NOTE: Specifications, as shown, are approximately equivalent but may not in all cases be interchangeable for procurement and inspection.

were made of the Underwriters mixture. Swivels and couplings used aboard ship, are retained in a non-ferrous metal. The alloy used, however, is a common leaded yellow brass that can be made entirely from secondary material and scrap.

Suggests Design Changes

Other possible design changes are shown on the chart, and those which are currently most desirable are indicated by the use of heavier connecting lines. Results to date have been very encouraging. Much progress has been made. The actual saving in primary copper by specification changes is already measured in terms of thousands of tons per month. Much more still remains to be done. It is work in which all connected with the war effort can cooperate.

Ingot makers, foundrymen and others who have direct knowledge of items where changes can be made to conserve critical materials, should bring them to the attention of those responsible for the specifications involved. Specific recommendations should be made.

In this, the Conservation Division of the War Production Board will gladly be of assistance. But it is primarily a challenge to the design engineer to see that, by a closer examination of end use, he secures the best possible utilization of our material resources to win this war.

Armour Dedicates New Metals Research Unit

ON JANUARY 11, following a luncheon at which prominent members of industry in Chicago were present, Armour Research Foundation of Illinois Institute of Technology dedicated its new Metals and Minerals Research Building. The dedication ceremonies were climaxed spectacularly by turning on the blower of the cupola by means of electronics.

Following the official opening, demonstrations of various pieces of equipment were held. Not only was the foundry industry well represented among those attending but also in the equipment installed in the building, which included, among other apparatus, a complete sand control laboratory, a cupola and its various accessories, two induction furnaces, a core blowing machine, and several other pieces of equipment. It is contemplated that in addition to the above equipment, used in the production of castings, a small converter for the manufacture of steel and non-ferrous melting furnaces will be installed.

Highlight of the dedication and inspection ceremonies was the pouring off of several molds by Gen. T. S. Hammond, Chief, Chicago Ordnance District and a past president of A.F.A., assisted by M. J. Gregory, Factory Manager, Caterpillar Tractor Co., Peoria, Ill., present director of A.F.A.

The new Research Building is of modernistic design, well lighted and well adapted to the solution of commercial research problems. Dr. Harold Vagtborg is director of the Foundation.

Wisconsin Chapter Holds 6th Regional Conference Feb. 18-19

W. A. Hambley
Allis-Chalmers Mfg. Co.
Chairman, Regional Conference

THE 6th Annual Regional Foundry Conference, sponsored jointly by the Wisconsin Chapter of A.F.A. and the University of Wisconsin, will be held February 18 and 19 at the Hotel Schroeder, Milwaukee. With 23 technical sessions on topics of immediate importance to foundrymen scheduled for the two-day meeting, a large attendance is expected from plants in the chapter and nearby areas.

Sessions on malleable iron, steel, gray iron, non-ferrous and patternmaking are scheduled. Papers and discussions on conservation work in wartime, the use of substitute materials, salvage methods, scrap, and core and molding sands will be presented.

Featuring the program will be two symposiums on malleable iron. One symposium, of two sessions, will deal with the manufacture of malleable castings for Army and Navy work, with local malleable plant executives and representatives of Army Ordnance and Naval Inspection present. At another symposium, elimination of problems in malleable iron foundries will be considered, again in two sessions.

An additional symposium of two sessions on the construction and checking of patterns has been arranged.

Among the well known men of the industry who will present papers are H. W. Dietert, Harry W. Dietert Co., Detroit; F. B. Riggan, Key Company, East St. Louis, Ill.; T. E. Barlow, Vanadium Corp. of America, Detroit; N. F. Tisdale, Molybdenum Corp. of America, Pittsburgh; Pat Dwyer, *The Foundry*, Cleveland;

John Bing
A. P. Green Fire Brick Co.
Co-Chairman, Regional Conference

Prof. E. R. Shorey
University of Wisconsin
Associate Chairman

and C. E. Westover, Executive Vice-President of A.F.A.

Chapter President Geo. K. Dreher, Ampco Metal, Inc., Milwaukee, has appointed W. A. Hambley, Allis-Chalmers Mfg. Co., Milwaukee, chairman of the annual conference. Assisting him will be John Bing, A. P. Green Fire Brick Co., Milwaukee, as co-chairman, and two associate chairmen from the University of Wisconsin: Prof. J. F. Oesterle, and Prof. E. R. Shorey.

Following registration from 9:00 a. m. to noon, February 18, the conference will be officially opened by a luncheon. Prof. F. E. Johnson, Dean, College of Engineering, University of Wisconsin, Madison, will deliver the welcoming address at this time, with Dr. C. A. Dykstra, president of the University, presenting the keynote address.

A speaker of national importance will highlight the program

Prof. J. F. Oesterle
University of Wisconsin
Associate Chairman

and main banquet, to be served the evening of opening day. Full details of the program as announced by the Wisconsin Chapter are shown below.

Wisconsin Regional Conference--Feb. 18-19

SCHEDULE OF SESSIONS

Thursday, February 18

9:00 a.m.-12:00—Registration and "Get-Together," Hotel Schroeder. Moving pictures shown in Movie Room.

12:00-2:00 p.m.—Luncheon, Hotel Schroeder.

1:00 p.m.—*Chairman,* Dr. J. F. Oesterle, University of Wisconsin, Madison.

1:10 p.m.—Welcoming Address: Prof. F. E. Johnson, Dean, Engineering College, University of Wisconsin, Madison.

1:20 p.m.—Keynote Address: Dr. C. A. Dykstra, President, University of Wisconsin.

2:00-3:30 p.m.—Gray Iron.
C. E. Bales, Ironton Firebrick Co., Ironton, Ohio, and Chairman, A.F.A. Refractory Committee.
"Conservation of Refractories by Correct Use."

2:00-3:30 p.m.—Malleable Iron Symposium (No. 1).
Chairman, L. D. Harkrider, General Malleable Corp., Milwaukee.
Local malleable executives, representatives of Army Ordnance and Navy Inspection departments.
"Manufacture of Malleable Iron Castings for Army and Navy."

2:00-3:30 p.m.—Non-Ferrous.
"Silicon Bronze."

2:00-3:30 p.m.—Patternmaking Symposium.
"Construction and Checking of Patterns."

2:00-3:30 p.m.—Steel.
N. F. Tisdale, Molybdenum Corp. of America, Pittsburgh.
"Use of Boron in Steel and Its Effect on Physical Properties and Machinability."

3:40-5:10 p.m.—Gray Iron.
T. E. Barlow, Vanadium Corp. of America, Detroit.
"Inoculations, Their Uses and Effects."

3:40-5:10 p.m.—Malleable Iron Symposium (No. 1 continued).
"Manufacture of Malleable Iron Castings for Army and Navy."

3:40-5:10 p.m.—Non-Ferrous.
"Salvage and Welding of Non-Ferrous Castings."

3:40-5:10 p.m.—Patternmaking Symposium (cont.).
"Construction and Checking of Patterns."

3:40-5:10 p.m.—Steel.
C. E. Westover, Executive Vice-President, American Foundrymen's Association, Chicago.
"Spinning Steel Castings."

6:30 p.m.—Official Banquet.
Address by speaker of international importance.

Friday, February 19

9:00-10:20 a.m.—Gray Iron.
Pat Dwyer, *The Foundry,* Cleveland.
"Gates and Risers."

9:00-10:20 a.m.—Malleable Iron Symposium (No. 2).
Chairman, L. D. Harkrider, assisted by local malleable foundrymen and J. H. Lansing, Malleable Founders Society, Cleveland.
"Eliminating Problems in Malleable Foundries."

9:00-10:20 a.m.—Non-Ferrous.
"Aluminum Alloys and Heat Treatment."

9:00-10:20 a.m.—Steel.
"Inspection—An Inspector's Viewpoint of How Castings Should Be Prepared."

10:30 a.m.-12:00—Gray Iron.
"Heat Treatment of Cast Iron."

10:30 a.m.-12:00—Malleable Iron Symposium (No. 2 continued).
"Eliminating Problems in Malleable Foundries."

10:30 a.m.-12:00—Non-Ferrous.
Scrap Clinic.

10:30 a.m.-12:00—Steel.
"Gates and Risers."

12:15 p.m.—Luncheon.

1:15 p.m.—Address by nationally known speaker.

2:15-3:30 p.m.—Joint Meeting of All Groups.
H. W. Dietert, Harry W. Dietert Co., Detroit.
"The Behavior of Sand and Cores at Elevated Temperatures."

3:40-5:10 p.m.—Gray Iron.
"Core and Molding Sand Practice."

3:40-5:10 p.m.—Malleable Iron.
"Increased Use of Malleable Iron During and After the War."

3:40-5:10 p.m.—Non-Ferrous.
H. W. Dietert, Harry W. Dietert Co., Detroit.
"Core and Molding Sands."

3:40-5:10 p.m.—Steel.
F. B. Riggan, Key Company, E. St. Louis, Ill.
"Control of High Temperature Physical Properties of Cores."

New Members

(Dec. 16, 1942 to Jan. 15, 1943)

Sustaining Member:

Thumann Brass Foundry, Stuttgart, Ark. (W. W. Thumann, Partner)

Conversions:

Company from Personal—

DeSanno Foundry & Machine Co., Oakland, Calif. (Fred DeSanno, Owner)

Industrial Supply Co., San Francisco, Calif. (R. W. Goldwater, Owner)

Pacific Brass Foundry of San Francisco, San Francisco. (Fred A. Mainzer, Mgr.)

Phoenix Iron Works, Oakland, Calif. (S. D. Russell, Pres.)

Central Indiana Chapter

Mitchell Eubanks, C & G Foundry & Pattern Works, Indianapolis, Ind.

***Golden Foundry Co., Columbus, Ind. (S. F. Swain, Purch. Agent)**

Herbert L. Meyers, Foreman, Interstate Foundry Co., Indianapolis

Fred Mattingly, Foundry Foreman, Interstate Foundry Co., Indianapolis

A. W. Pfeffer, Core Room Foreman, Interstate Foundry Co., Indianapolis

Howard C. Phillips, Foundry Foreman, International Harvester Co., Indianapolis

George J. Rooney, Abrasive Engr., Macklin Co., Jackson, Mich.

George Stofer, Core Room Foreman, Golden Foundry Co., Columbus, Ind.

Central New York Chapter

Augustus F. Bowen, Supv., Goulds Pumps, Inc., Seneca Falls, N. Y.

Chesapeake Chapter

Hampton M. Campbell, Asst. Foreman-Plow Fdry., Lynchburg Foundry Co., Lynchburg, Va.

Harvey W. Harriss, Asst. Plant Mgr., Lynchburg Foundry Co., Lynchburg

Edgar W. Hollinger, Foreman, Landis Tool Co., Waynesboro, Pa.

Chicago Chapter

W. J. Hebard, Personnel Director, Continental Roll & Steel Foundry Co., East Chicago, Ind.

Leonard Kramer, Asst. Foreman, Hansell-Elcock Co., Chicago

Horace D. Weak, Elec. Furn. Melter, American Steel Foundries, East Chicago

Cincinnati District Chapter

Robert W. Donehower, Prod. Engr., Wright Aeronautical Corp., Lockland, Ohio

Don W. Jorgenson, Wright Aeronautical Corp., Lockland

William D. Miller, Junior Prod. Engr., Wright Aeronautical Corp., Lockland

George Oberlander, Partner, General Pattern Works, Cincinnati

Detroit Chapter

Engineering Library, Chrysler Corporation, Detroit

Orville C. Hoover, Supt., Acme Foundry Co., Detroit

***Industrial Lubricants Co., Detroit. (G. P. Hogg, Service Engr.)**

***Michigan Smelting & Refining Div., Bohn Aluminum & Brass Corp., Detroit. (Henry Levitt, General Mgr.)**

William F. Reardon, Vice-Pres., National Alloys Company, Detroit

Eastern Canada and Newfoundland Chapter

A. Ashton, Estimator, Canadian Car & Foundry Co. Ltd., Montreal, Que.

Claude Bourgeois, Prod. Engr., The Plessisville Foundry, Plessisville, Que.

P. P. S. Chapman, Met., Canadian Car & Foundry Co. Ltd., Montreal

Edward Cyr, Montreal

James B. Erskine, Core Room Foreman, Canadian Car & Foundry Co. Ltd., Montreal

Guy Guivremont, Leader in Die Design, Sorel Industries, Ltd., Sorel, Que.

Robert Hale, Fdry. Foreman, Canadian Car & Foundry Co. Ltd., Montreal

Alfred John Howard, Brass Fdry. Foreman, T. McAvity & Sons, Ltd., St. John, N.B.

Charles B. Judson, Open Hearth Supt., Canadian Car & Foundry Co. Ltd., Montreal

James Murphy, Fdry. Foreman, Canadian Car & Foundry Co. Ltd., Montreal

W. Turney Shute, Inspector, Canadian Car & Foundry Co. Ltd., Montreal

Robert Stott, Fdry. Foreman, Canadian Car & Foundry Co. Ltd., Montreal

F. J. Tellier, Chief Inspector, Canadian Car & Foundry Co. Ltd., Montreal

Frank Thompson, Manager, Canadian Fairbanks-Morse Co. Ltd., Sherbrooke, Que.

Robert Thompson, Asst. Met., Canadian Car & Foundry Co. Ltd., Montreal

Willett Tibbits, Asst. Open Hearth Supt., Canadian Car & Foundry Co. Ltd., Montreal

Ernest Tyler, Gen'l Fdry. Foreman, Canadian Car & Foundry Co. Ltd., Montreal

E. F. Viberg, Asst. Works Mgr., Canadian Car & Foundry Co. Ltd., Montreal

Thomas Wedderburn, Foreman, Cleaning Dept., Canadian Car & Foundry Co. Ltd., Montreal

Metropolitan Chapter

Joan Hyde Bernardin, Sand Tech., Wright Aeronautical Corp., Paterson, N. J.

D. S. Yeomans, East Orange, N. J., Sales, George F. Pettinos, Inc., Philadelphia

Michiana Chapter

John J. McAntee, Foundry Mgr., Covel Mfg. Company, Benton Harbor, Mich.

Northeastern Ohio Chapter

W. S. Hodge, Prop., W. S. Hodge Foundry, Greenville, Pa.

Northern California Chapter

B. F. Blakeney, Mgr., Rich Manufacturing Co., Oakland

Edwin Carter, Supt., Melting Dept.—General Metals Corp., Oakland

John Evonow, Asst. Foreman, Branch Foundry, Pacific Brass Foundry of San Francisco, San Francisco

***Joshua Hendy Iron Works, Sunnyvale. (A. R. Linn, Mgr., Industrial Relations)**

Wm. Leishman, Foreman, Core Room, Pacific Brass Foundry of San Francisco, San Francisco

Ambrose Milani, Foreman, Branch Foundry, Pacific Brass Foundry of San Francisco, San Francisco

Edward Morgan, Asst. Mgr., Empire Foundry Company, Oakland

Thomas H. Ratfield, Melter, General Metals Corp., Oakland

Ontario Chapter

***The William Kennedy & Sons, Limited, Owen Sound, Ont., Canada**

Philadelphia Chapter

Robert M. Anson, Crucible Steel Castings Co., Lansdowne, Pa.

John J. Thompson, Patt. Foreman, Fletcher Works, Inc., Philadelphia

St. Louis District Chapter

Mahlon D. Scott, St. Louis, Mo., Repr., Swan-Finch Oil Corp., Chicago

University of Minnesota Student Chapter

Harley Burgett, Student, University of Minnesota, Minneapolis, Minn.

Richard C. Butler, Student, University of Minnesota, Minneapolis

*Company members.

Harold L. Cooperman, Student, University of Minnesota, Minneapolis
Neil B. Griebenow, Student, University of Minnesota, Minneapolis
John Otto Haack, Student, University of Minnesota, Minneapolis
Jack N. Krueger, Student, University of Minnesota, Minneapolis
Clifton Floyd Priest, Student, University of Minnesota, Minneapolis.
Stanley R. Sawina, Student, University of Minnesota, Minneapolis
Eugene R. Shelley, Student, University of Minnesota, Minneapolis
D. Stuart Taber, Student, University of Minnesota, Minneapolis
Stanley C. Tingquist, Student, University of Minnesota, Minneapolis

Western Michigan Chapter

Vincent Jeannot, Chief Inspector, West Michigan Steel Foundry Co., Muskegon, Mich.
Charles Pierce, Molding Foreman, West Michigan Steel Foundry Co., Muskegon
Arthur J. Pilon, Pouring Foreman, West Michigan Steel Foundry Co., Muskegon

Western New York Chapter

Carol Fenevessey, President, Mellaphone Corp., Rochester, N. Y.
Ira J. Kaufmann, Production, Rochester Smelting & Refining Company, Rochester

Wisconsin Chapter

Erwin J. Bell, Sales, Federal Foundry Supply Company, Milwaukee
Thomas E. Boehm, Research Dept., Allis-Chalmers Mfg. Co., West Allis, Wis.
Harold F. Haase, Instructor, West Allis Vocational School, West Allis
Raldon A. Liesse, Chief Time Study Engr., Sivyer Steel Casting Co., Milwaukee
Frank J. Resch, Inspector, Allis-Chalmers Mfg. Company, West Allis
Jacob R. Van Kooy, Instructor in Patt. Making, Milwaukee Vocational School, Milwaukee

Outside of Chapter

*Amory Foundry Co., Jamaica Plain, Mass. (Harold M. Twombly)
John Arnott, Holm Foundry, Cathcart, Glasgow, S.4., Scotland
*The Derby Castings Co., Seymour, Conn. (Chas. H. Stokesbury, Treas.)
J. F. Eaton, Bethlehem Supply Co., Tulsa, Okla.
H. G. Hall, Chief Met., Castings Limited, Selborne St., Walsall, Staffs, England
J. O. Smith, Fdry. Foreman, Cooper-Bessemer Corp., Grove City, Penna.
Earl White, Paxton-Mitchell Co., Omaha, Neb.

Chapter War Problems Groups Cooperate Closely With WPB

THE War Production Board, in the interest of increasing production of war materials, is holding War Production Clinics in many manufacturing centers of the United States. These clinics are for the purpose of bringing together producers in various branches of industry for mutual discussion of their production problems, and are being organized with the assistance of the technical organizations in the various production centers.

Thus far, clinics have been held in New York, Peoria and Buffalo, and other clinics are scheduled for similar production centers. In those centers in which chapters of the American Foundrymen's Association exist, the War Problems Committees of these chapters have represented the foundry industry in laying out and executing the foundry's part in the programs.

Chapter War Problems Committees in those areas in which such production clinics have not as yet been held and which have not as yet been asked to cooperate in these projects, should hold themselves in readiness to cooperate in staging these clinics. Plans for several clinics in various foundry centers now are under way, and in those centers the War Problems Committees of the respective chapters are cooperating admirably in the interest of the foundry industry.

ODT Issues Special Carlot Loading Rules

SPECIAL loading requirements for carlot rail shipments have been issued by the Office of Defense Transportation, effective January 4, covering foundry supplies as well as many other commodities. The requirements (Spec. Direction ODT 18, Rev. 5) revises restrictions on some products and brings many more under General Order ODT 18, effective since November 1.

In general the directions are intended to reinforce the necessity of loading rail cars either to marked weights or to visible capacity, in conserving transportation facilities. The requirements affecting carlot shipments of foundry supplies are given as follows:

Ground Coal, Ground Pitch, Core Compound:

(a) In multiwall paper bags, shall be loaded to a weight not less than 60,000 lbs.

(b) In paper-lined burlap bags, shall be loaded to a weight not less than 70,000 lbs.

Foundry Facing:

(a) In barrels, shall be loaded on end, not less than one tier in height, covering entire floor space of the car.

(b) In multiwall paper bags, shall be loaded to a weight not less than 50,000 lbs.

Hot Top Compound:

In bags, shall be loaded to a weight not less than 80,000 lbs.

Foundry Supplies (Mixed carlot shipments of commodities shown above, containing not in excess of 25 per cent hot top compound):

(a) In multiwall paper bags, shall be loaded to a weight not less than 60,000 lbs.

(b) In paper-lined burlap bags, shall be loaded to a weight of not less than 70,000 lbs.

(c) In combination of (a) and (b), shall be loaded to a weight not less than 60,000 lbs.; provided, however, that the weight of the foundry supplies, in paper-lined burlap bags, does not exceed 25 per cent of the weight of the shipment.

A new handbook on service equipment standards has been issued by the National Electrical Manufacturers Association, setting up performance, rating, test and other standards for various service equipment.

Random Comments

LOOKING FORWARD ON APPRENTICESHIP

THE National office has received at various times reports on the progress being made by the Federal Committee on Apprenticeship during the war effort. This committee has a difficult job to do.

It usefulness is considerably handicapped by a variety of state laws concerning the age for accepting apprentices. For training as all-around workmen in a craft, it is generally recognized that high school graduates make the best apprentices. Under the present draft laws, the apprentice material eventually will become practically nil. Even those plants which have established apprenticeship systems may find some difficulty in maintaining them because of lack of personnel.

This country is now suffering in its crucial moments from a shortage of skilled mechanics, the men who can operate the machines and produce the materials needed to win the war. We are tempted to ask: "Why?"

We are well aware of the difficulties and the procedures that must be followed in establishing and operating a properly planned apprentice program to give the best results, but it seems that industry as a whole, including the foundry industry, has been rather shortsighted. Throughout the industry as a whole, apprenticeship has been a subject to be talked about, but, like the weather, very little has been done about it. There has been an attitude of "Let George do it."

We have, within the foundry industry, outstanding examples of what can be accomplished through a properly planned and operated apprentice training system. The Falk Corporation, Milwaukee; Brown & Sharpe Mfg. Co., Providence, R. I., the latter having trained apprentices to the foundry trade for over 100 years; and others, have proved the worth of such training systems. However, as a whole, relatively little has been done.

Suddenly the industry is faced with an acute shortage of skilled manpower. How can it be overcome? The answer is short-term training methods.

While the war is going on, time cannot be taken, because of the acute skilled manpower shortage, to organize and operate apprentice training programs in many instances. Men and women are required quickly and must be trained in the minimum of time. The results of this condition are what?

After the war is over, we have created a group of specialists who know one, or at the most, a few jobs or operations. In times of business recessions, what opportunity do these men have with their limited training? Very little, because there is an excess of specifically trained and a wealth of over-all trained men. The former must work at one job or there is no job available for him.

Let us recognize that the time for extensive training of the individual is limited under war conditions. But, let us resolve to do our utmost to see that those individuals who merit further training, because of ability or adaptability, receive such training at as early a moment as possible.

After the war, industry should have learned its lesson on the trained manpower question. It should establish apprentice training systems so that the present lack of skilled manpower is not repeated in the future. Once this war is won, let industry, through apprenticeship, create a pool of skilled workers so that the present situation, so far as trained mechanics are concerned, does not repeat itself at a critical time in our country's future history.

WHAT ABOUT CALLING IT: "UNINTENTIONAL SABOTAGE?"

DURING the past several weeks the necessity for increased accident prevention was brought home to foundries with a vengeance. In one plant, water in the ladle pit caused a violent, destructive explosion. In another plant, water seeping into the molding pit also resulted in an explosion. And a third foundry suffered when a core oven blew up.

These might be called spectacular accidents. But disruptive of production as they undoubtedly were, they were far less so than the appalling, tremendous trickle of daily accidents involving less fireworks but summing up to a staggering total of man-hours lost from production of the stuff that makes Victory.

Little wonder that more and more safety-conscious men are adopting the attitude that preventable accidents actually constitute "unintentional sabotage." Is there any American who still does not understand that waste of manpower slows down the delivery of vital war materials . . . somewhere, somehow, at some point along the line of supply?

The trouble seems to be that when we speak of men dead and disabled through accidents, we are inclined to look at them as "the other fellow's accidents." But let's see how close to home they strike, in terms of sons, husbands and fathers on the battlefronts of the world. Here are a few graphic comparisons to think about:

The man-days lost by accidents in 1942 would build 66 battleships, double the number in the combined American and British navies.

Their cost would run New York City for six years.

They resulted in an 83,000-ton setback to our seapower . . . loss of the Normandie.

The man-hours lost would have built 500 destroyers, 600 submarines, 260,000 light tanks, 150,000 trainer planes, 100,000 fighter planes, 40,000 medium bombers, or 20,000 heavy bombers.

What would that material, irretrievably lost through accidents, have done for our armed forces?

No new information or research is needed to reduce accidents, but simply a wider acceptance of time-tested standards for correction of unsafe work practices. That accidents are *caused* is graphically shown by results of many surveys.

What is needed is a more strict observance of the fundamental rules of safe practices and good-housekeeping, not only by workers but by management itself. The information needed to set up a safety program is readily available . . . in general, through the National Safety Council; specifically, for the foundry industry, in the A.F.A. "Recommended Code of Good Safety Practices for Protection of Workers in Foundries."

If uninterrupted production is the first essential for winning the war, then accident prevention, through adoption of safe practices, is as important to our war effort as war production itself.

Some 3,000 men died at Pearl Harbor . . . and aroused a nation. Over 100,000 men died in the U. S. last year from accidents . . . what headlines did *they* make?

Government Orders of the Day for Industry

More detailed information on any of the following news briefs may be obtained by writing direct to the U. S. Information Center, 1400 Pennsylvania Ave., N.W., Washington, D. C. For prompt reply, it is suggested that requests be made by Release numbers shown.

Materials Down-Grading Chart (WPB) — Down-grading chart to guide engineers and designers in specifying lower grades of critical material for brass and bronze castings issued Jan. 15 by Specifications Branch, Conservation Div. (Chart reproduced on page 22, this issue) *(Release No. T-1592)*

Controlled Materials Plan (WPB) —Only those who meet time schedule of CMP in returning application blanks (CMP-4A, CMP-4B) will benefit by direct allotments of controlled materials in 2d quarter 1943, Director of CMP Division states. *(Release No. WPB-2372)*

Hiring Restriction Clarified (WMC) — Manpower Commission does not intend to restrict all hiring and recruiting activities to U. S. Employment Service, Chairman McNutt has announced. *(Release No. PM-4269)*

Merit Emblems for Scrap Dealers (WPB)—Employees in auto graveyards and scrap dealer yards will be eligible for lapel button emblems issued by WPB for excellency in producing scrap, according to Chief, Scrap Processors Branch, Conservation Div. *(Release No. WPB-2280)*

Scrap Prices Adjusted (OPA)— Adjustments in scrap iron and steel prices, to encourage sorting prior to shipment, announced Jan. 16 in Amend. 10 to Rev. Price Sched. No. 4, eff. Jan. 22. *(Release No. OPA-1479)*

Iron, Steel Repair Priority (WPB) —Producers of iron and steel granted use of highest preference rating, AA-1, for obtaining repair and maintenance materials, announced Jan. 19. *(Release WPB-T-1614)*

Clarify Steel Order (WPB) — Orders for corrosion and heat-resistant steel, if approved on Form PD-707, can be completed even if rated lower than AA-5, under Interpretation 3 of Supp. Order M-21-d. *(Release No. T-1553)*

Asks Idle Steel Dies Scrap (WPB) —Conservation Div. urges owners of idle steel dies to give die-casters where obsolete dies are held permission to turn in immediately for scrap. *(Release No. T-1556)*

Gray Iron Regulation Amended (OPA)—Sellers of gray iron castings with 1942 net sales of $40,000 or less excluded from price control in Amend. 2 to Reg. 244, eff. Dec. 26. Amendment also affects maximum prices for castings not sold during base period, extends time for filing cost records, supplements record-keeping requirements. *(Release No. OPA-T-418)*

Ceramic Fireplace Grates (WPB) —At least 1,000,000 ceramic fireplace grates were made for home use this winter, announced by Conservation Div. which assisted in designing and producing the new product, expected to save 30,000 tons of cast iron. *(Release No. WPB-2254)*

Malleable Iron Ceilings (OPA)— An alternative and easier method for foundries to use in determining maximum prices of certain malleable iron castings provided in Amend. 2 to MPR 241, eff. as of Oct. 21, 1942. *(Release No. OPA-T-480)*

Aluminum PD-40A Report Dropped (WPB)—Because CMP inventory report for 4th quarter 1942 will be required of aluminum users, report on Form PD-40A will not be required, Aluminum & Magnesium Div. announces. *(Release No. T-1582)*

Secondary Aluminum Price (OPA) —Maximum base price of 15c lb. for all secondary aluminum ingot, with certain specific exceptions, established by Amend. 5 to RPS 2, eff. Jan. 11. *(Release No. OPA-T-477)*

Tin Consumption Cut (WPB)— U. S. tin consumption will be cut another 12,000-15,000 tons in 1943 by new Gen. Pref. Order M-43, issued Jan. 9 to replace previous Orders M-43 and M-43-a, cut estimated to bring 1943 tin use to one-half 1941 consumption. *(Release No. WPB-2334)*

Vanadium Order Amended (WPB) —Amended vanadium Order M-23-a issued Dec. 26 by Dir. Gen. of Operations to bring previous special directives all under framework of the order. *Release No. T-1464)*

Magnesium Order Forms (WPB) —Magnesium allocation order M-2-b simplified to bring into line with form of allocation orders now generally issued, announced Dec. 31, amended order eliminating all reference to preference ratings since supply of magnesium and magnesium products is directly allocated to users. *(Release No. T-1501)*

Virgin Magnesium Price Cut (OPA) — Virgin magnesium base price reduced 2c lb. by Dow Chemical Co., eff. Jan. 1, at request of OPA. *(Release OPA-1453)*

Magnesium Ceilings Set (OPA)— Specific maximum prices for magnesium scrap and remelt magnesium ingot established in MPR 302, eff. Jan. 20. *(Release No. OPA-T-504)*

1943 Lead Supply (WPB)—Lead supply in 1943 is expected to drop below 1942 supply, both imports and domestic production, Lead Producers Industry Advisory Comm. told by Dir. of Tin-Lead Division. *(Release No. WPB-2370)*

Revised Lead Regulation (OPA)— Price regulation for scrap and secondary lead revised and amended, price schedule for primary lead amended, eff. Jan. 20, through MPR 70 and Amend. 3 to RPS 69. *(Release No. OPA-T-503)*

Used Machinery Selling Price (WPB)—Selling price of used machinery, classed as "critical industrial machinery" under Gen. Limitation Order L-83, is clarified by Interpretn. 1 of the order, issued Dec. 17 by Dir. Gen. for Operations. *(Release No. T-1417)*

Farm Machinery Eased (WPB)— Limitation Order L-170, Jan. 19, drops 3 months restriction on distributor's inventory of farm machinery repair parts, eliminated filing "Certif. for Emerg. Order" to obtain repair reports. *(Release No. WPB-T-1611)*

Halt Textile Machinery Sale (WPB)—Production and sale of textile and leather machinery and parts prohibited Dec. 26 without specific authorization of Dir. Gen. for Operations, under Order L-215 covering both new and used textile, clothing, industrial sewing, and shoe and leather working machinery. *(Release No. T-1426)*

Textile Machine Exemptions (WPB)—No authorization needed for production or purchase of repair or maintenance parts for textile machinery, ruled in interpretation of Order L-215. *(Release No. T-1569)*

Plumbing Metal Curtailed More (WPB)—Further restrictions on use of metal in manufacture of plumbing fixtures imposed by enlarged, revised Sched. XII of Order L-42, issued Dec. 30. *(Release No. T-1496)*

Hardware Schedule Advanced (WPB)—Effective date of Sched. 1, Limitation Order L-236, converting manufacture of builders finished hardware, advanced from Jan. 15 to March 1, in amend. by Dir. Gen. for Operations, issued Jan. 13. *(Release No. T-1584)*

Fireplace Grate Ceilings (OPA)— Specific ceiling prices established on new types of fireplace grates manufactured by 9 firms in New York and New England, under Order 98, Sec. 1499.158 of MPR 188, eff. from Dec. 31-April 1. *(Release No. OPA-1353)*

Truck Tire Control (WPB)—Sale and delivery of new tires for industrial power trucks now under WPB control, eff. Jan. 16, Supp. Order M-15-g, issued by Dir. Gen. for Operations. *(Release No. T-1607)*

CHAPTER OFFICERS

Elliot R. Jones
Lumen Bearing Co., Buffalo, N. Y.
Director
Western New York Chapter

J. A. Wotherspoon
Imperial Iron Corp., Ltd.,
St. Catherines, Ont.
Director
Ontario Chapter

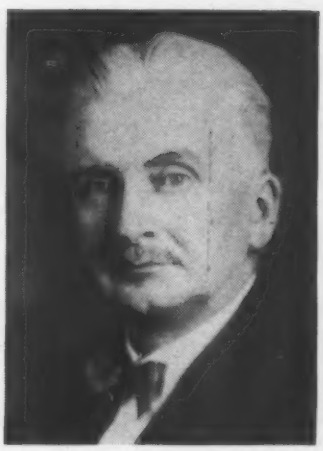
James L. Yates
Worthington Pump & Machinery
Corp., Buffalo, N. Y.
Director
Western New York Chapter

Chas. F. Carson
National Supply Co., Toledo, Ohio
Chairman
Toledo Chapter

Emmet C. John
National Sewing Machine Co.,
Belvidere, Ill.
Director
Northern Illinois-Southern
Wisconsin Chapter

J. T. Fegley
North Bros. Mfg. Co., Philadelphia
Director
Philadelphia Chapter

E. J. Bair, Sr.
Utica Radiator Corp., Utica, N. Y.
Director
Central New York Chapter



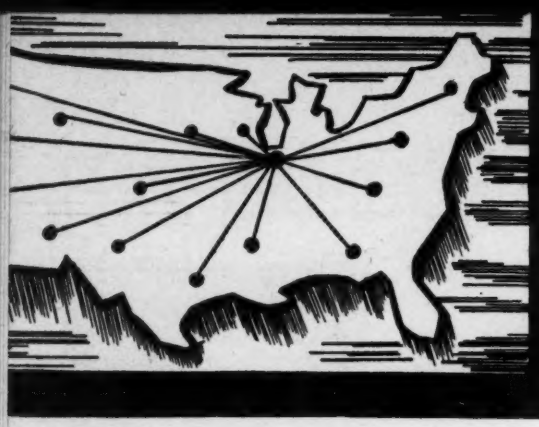
Wm. F. Casey
Canadian Locomotive Co., Ltd.,
Kingston, Ont.
Director
Eastern Canada and Newfoundland
Chapter

Jos. E. Drain
Oliver Farm Equipment Co.,
South Bend, Ind.
Director
Michiana Chapter

Wm. F. Lange
Casting Service Corp.,
LaPorte, Ind.
Director
Michiana Chapter

Herman Hess
Clark Equipment Co.,
Buchanan, Mich.
Director
Michiana Chapter

J. W. Reid
R. Hoe & Co., Dunellen, N. J.
Director
Metropolitan Chapter



Chapter Activities

Wisconsin Greets A.F.A. Officers and Discusses Saving Materials

By Geo. M. Pendergast,* Milwaukee, Wis.

DESPITE one of the worst blizzards in years, a large attendance turned out for the January 15 meeting of the Wisconsin Chapter, held at Hotel Schroeder, Milwaukee, to greet three national officers of A.F.A. President Duncan P. Forbes, Gunite Foundries Corp., Rockford, Ill.; Director Ben D. Claffey, General Malleable Corp., Waukesha, Wis., and Secretary R. E. Kennedy, Chicago, made the meeting seem almost like a "National Officers' Night." Chapter President George K. Dreher, Ampco Metal, Inc., Milwaukee, presided.

President Forbes complimented the Wisconsin chapter on its energetic activities, and commented particularly on the meeting of the chapter's War Problems Committee held in the afternoon. Mr. Claffey announced that Roy M. Jacobs, Standard Brass Works, Milwaukee, and past president of the chapter, had been nominated a national Director of A.F.A.

For the technical program, the meeting six sessions were held. In the gray iron section, R. G. McElwee, Vanadium Corp., of America, Detroit, also associated with WPB, spoke on "Making Every Ounce Count." He outlined substitutes for alloys, and

*Geo. M. Pendergast & Co., Inc., and Publicity Chairman, Wisconsin chapter of A.F.A.

When good fellows of the Wisconsin chapter got together for their annual Christmas party on December 18, at Milwaukee, Cameraman John Bing found many happy and prominent faces. For example: Second row, left (left to right)—S. E. Shaver, Werner G. Smith Co., Milwaukee; D. W. Thiem, Pollard Oil Products Co., Milwaukee; R. C. Woodward, Bucyrus-Erie Co., South Milwaukee; David C. Zuege, Sivyer Steel Casting Co., Milwaukee. Second row, right (left to right)—Chapter President Geo. K. Dreher, Ampco Metal, Inc., Milwaukee; Past President Geo. A. Zabel, Universal Foundry Co., Oshkosh, Wis.; Harry E. Ladwig, Allis-Chalmers Mfg. Co., Milwaukee.

(Photos courtesy John Bing, A. P. Green Fire Brick Co.)

urged greater use of available materials. Discussion was led by Frank L. Waldenmeyer, A. J. Lindemann & Hoverson Co., Milwaukee.

In the malleable session, Ben Yops, General Malleable Corp., offered ideas on conservation and reclamation of numerous waste items in a program of "Using the Things You Formerly Threw Away."

Combustion problems and furnace atmospheres were discussed in the non-ferrous session by R. G. Guthrie, Chicago.

The steel session was presided over by Chas. Fuerst, Falk Corp., Milwaukee, featuring a talk on molding and core sand problems by Chas. Schureman, F. E. Schundler Co. His comments on shape and distribution of sand grains, essential plasticity, effect of refractoriness on molding sands, and preventing cracks resulted in lively discussion.

Speaking on "Wood for Pattern Construction" before the pattern group, Arthur Koehler, Forest Products Laboratories, Madison, Wis., discussed alternate materials and their workability, availability and use.

The chapter's new apprentice group held its first sectional session at this meeting under chairmanship of C. W. Morisette, Milwaukee Vocational School, with a fine program. R. E. Kennedy explained the A.F.A. apprentice contests, and J. R. Van Kooy, Milwaukee Vocational School, discussed apprenticeship from broad experience as a teacher of vocational courses.

Cincinnati Talks On Metal Purification

By Henry M. Wood,* Cincinnati, Ohio

WITH the subject of "Desulphurization and Metal Purification" as an attraction, 50 members and guests of the Cincinnati District Chapter attended the chapter's regular meeting January 11, at the Cincinnati Club. Chairman Frank E. Hutchinson, Reliance Foundry Co., Cincinnati, presided and introduced as guest speaker George S. Evans, Mathiesen Alkali Co., New York City, N. Y.

Mr. Evans' paper was instructive both as to cupola operation and refining at the ladle. The speaker outlined initial research with soda ash and included a discussion of the values of various fluxes such as limestone, dolomite, etc., and their effect on linings and slags. He gave his hearty endorsement to the A.F.A. Cupola Research Project.

*W. W. Sly Mfg. Co., and Secretary, Cincinnati District Chapter.

(Photos courtesy John Bing, A. P. Green Fire Brick Co.)

Christmas Party night for the Wisconsin chapter, December 18, with a big attendance and everyone anxious for the grand floor show to start.

Northern California Learns All About Magnesium Making

By Geo. L. Kennard,† San Francisco

WITH the fascinating subject of magnesium awaiting them, 86 members and guests of the Northern California Chapter gathered at the Athens Club, Oakland, December 29 for a special meeting. Chapter Chairman F. A. Mainzer, Pacific Brass Foundry of San Francisco, presided and introduced ten guests from the Permanente Metals Corp., San Jose, Calif., well qualified to deal with the subject of "Magnesium, What It Is, Where It Comes From, and Where It Is Going."

Dr. W. O. Wetmore, metallurgist; Robt. Chickering, foundry superintendent, and Peter Allen, public relations officer for the Permanente company, presented several reels of color film outlining the process of producing magnesium. This was the first time these films ever have been shown in public. Samples of magnesium pig and magnesium castings, as well as blocks of the crystalline form, were displayed to illustrate steps in the processes.

December Meeting

The December 22 meeting of the Northern California chapter marked the annual Christmas party, held in the St. Francis Hotel, San Francisco, with 180 members, guests and their ladies enjoying the evening. Chairman Fred Mainzer, ably assisted by Program Chairman Serge P. Kovaleff, Enterprise Engine & Foundry Co., South San Francisco, conducted the festivities.

Following dinner, Chas. J. P. Hoehn, Enterprise Engine & Foundry Co., and senior past chairman of the chapter, was presented with a beautiful ring in appreciation of continued service. Coat pins also were presented to each of the past chairmen and to Secretary George Kennard, all tokens carrying the A.F.A. emblem in gold. In addition, at each plate was a copy of the chapter's new roster and a Christmas favor, as a present from Chairman Mainzer.

Two excellent guest speakers addressed the meeting. Herman Weinberger, San Francisco, spoke on "Civil Liberties in Wartime," and Lt. Commander

†Northern California Foundrymen's Institute, and Secretary-Treasurer of the Northern California chapter of the Association.

E. J. Demson, U. S. N. R., Naval Inspection Bureau, San Francisco, gave an interesting talk on "Whose War?"

Entertainment included group singing, a ballet from the San Francisco Opera, specialty dancing, a magician, and Christmas songs by the talented Mrs. Kovaleff, wife of the chapter's program chairman. Afterward, an excellent orchestra took over, winding up what all voted an outstanding affair.

Specifications, Conservation Twin Subjects for Philadelphia

By Wm. S. Thomas,* Philadelphia

TWO fine talks featured the "Non-Ferrous Night" of the Philadelphia Chapter of A.F.A., held January 8 at the Engineers Club in that city, with over 100 members and guests attending. C. L. Warwick, Chief, Specifications Branch, and C. S. Cole, Chief of Metals Section, both of the War Production Board, Washington, D. C., were the guest speakers.

Mr. Warwick, secretary of A.S.T.M. for many years, explained the procedure in developing alternate emergency specifications for the conservation of critical materials. He pointed out that such revisions have brought savings of 10 per cent on structural steel, 20 per cent on reinforced, 30,000 lbs. of tin, 50 per cent on steel wiring and fencing, and 400,000 tons of steel in the housing program.

It is up to the foundrymen, he said, to suggest further means of saving critical materials and to point out where substitutions can be made. Work also is being done with our Allies on lend-lease materials, toward adoption by them of U. S. specifications.

Mr. Cole, previously with the Copper and Brass Research Association, presented a chart giving specific changes possible in non-ferrous specifications for saving materials. He pointed out how secondary and scrap metals in the 85-5-5-5 class often can be used in place of "G" metal in castings. The program would be helped greatly, he said, if foundrymen would check closely the specifications on every order and suggest changes to designers through the Specifications Branch of WPB.

During the meeting it was reported that Dr. G. H. Clamer, Ajax Metal Co., and long active in A.F.A. affairs, now is recovering from a recent operation.

*North Bros. Mfg. Co., and Chairman of Publicity Committee, Philadelphia chapter.

(Photos courtesy Wm. S. Thomas, North Bros. Mfg. Co.)

Taken as the roving cameraman roved among the tables at the Philadelphia chapter's annual Christmas party, at Hotel Philadelphia, Philadelphia. Thanks to the arrangements of Jack Robb, Jr., Hickman Williams & Co., the party was acclaimed by everyone.

Annual Christmas Party

Over 450 members and guests attended the 1942 Christmas party of the Philadelphia Chapter of A.F.A., December 21 at the Hotel Philadelphian. After a fine turkey dinner, a splendid floor show was offered, arranged through the entertainment committee headed by Jack M. Robb, Jr., Hickman Williams & Co., Philadelphia.

As a grand finale, ten door prizes of turkeys were distributed among those enjoying the event.

New England Elects New 1943 Officers

By Merton A. Hosmer,† Boston, Mass.

NEW officers and members of the executive committee of the New England Foundrymen's Association were elected at the group's annual meeting, held January 13 at Hotel Gardner, Boston. No technical program was presented, the dinner being followed by a program of entertainment arranged by Chas. A. Reed, Rogers-Brown Lavino Co., Cambridge, Mass., chairman of the entertainment committee.

Following are the officers and executive committee members elected to serve during the year ahead:

President, A. W. Calder, New England Butt Co., Providence, R. I.

Vice-President, T. C. Weiser, Griffin Wheel Co., Chelsea, Mass.

Treasurer, Arthur Gibby, East Boston, Mass.

Secretary, E. F. Stockwell, Barbour Stockwell Co., Cambridge.

Executive Committee: T. C. Weiser; M. A. Hosmer; B. W. Hagerman, Rice-Barton Corp., Worcester, Mass.; D. L. Parker, General Electric Co., Lynn, Mass.; J. Frank Dorney, Walworth Company, South Boston, Mass.; Chas. A. Reed.

†Hunt-Spiller Mfg. Corp., and Reporter, New England Foundrymen's Association.

December Meeting

New England foundrymen held their regular monthly meeting on December 9 at the Engineers Club, Boston, with 70 present and President Raymond Meader, Whitin Machine Works, Whitinsville, Mass., presiding. Speaker of the evening was G. S. Evans, Mathiesen Alkali Works, New York, on "Cupola Fluxes and Slags."

Mr. Evans defined fluxes and described their tendency to check silicon pickup and accelerate combustion. Limestone, dolomite and fluorspar were given as among the most important, and their reactions specified. The importance of slag to sulphur reduction was emphasized, the speaker stating that in cupola operations a reduction in sulphur pickup is usually accomplished, rather than a reduction of sulphur.

Eastern Canada Talks About Conserving Tin

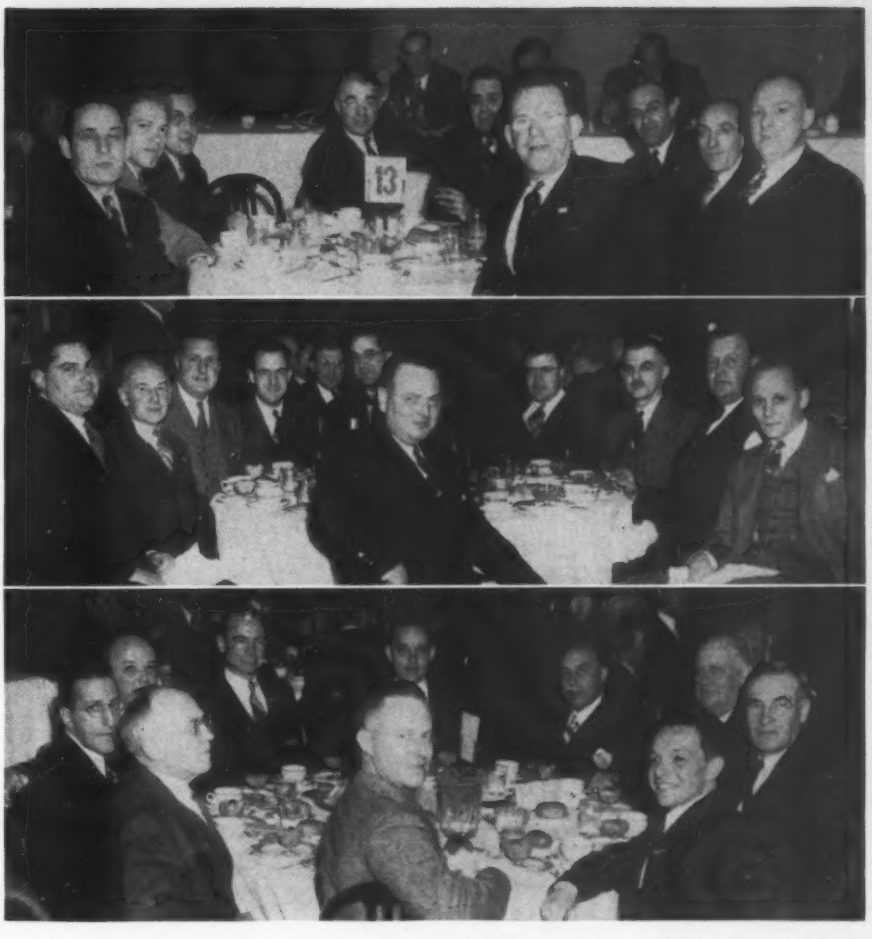
By R. E. Cameron,* Montreal, Que.

ANNOUNCEMENT that the Eastern Canada and Newfoundland Chapter, "baby" of the A.F.A., now has a membership of 149, was made at the chapter's general meeting held December 17 at the Mt. Royal Hotel, Montreal. Chairman C. C. Brisbois, Robert Mitchell Co., Ltd., Montreal, presided and announced the excellent enrollment record, introducing 41 new members to the group.

R. J. Keeley, Ajax Metal Co., Philadelphia, was introduced as the guest speaker, dealing with the most timely subject of "The Use of Silicon Bronzes in the Conservation of Tin." Mr. Keeley presented a number of medium weight castings to illustrate his talk, and discussed the production records on the castings. Following his talk a forum period brought forth additional points of interest. G. E. Tait, Dominion Engineering Works, Ltd., Lachine, Que., expressed the thanks of the chapter for the data presented.

O. L. Voisard, Robert Mitchell Co., Ltd., walked off with the evening's attendance prize, provided by P. H. Desrosiers. Announcement was made that chapter meetings hereafter will be held on Friday instead of Thursday.

*Webster & Son, Ltd.



(Photos courtesy Wm. S. Thomas, North Bros. Mfg. Co.)

Few Christmas parties of the Philadelphia chapter have been more successful than the one held December 21 with 450 members and guests attending. Here are a few shots around and about the banquet tables.

Twin City Subject To Foundry Safety

By O. W. Potter,† Minneapolis, Minn.

THE January 18 meeting of the Twin City Chapter of the A.F.A. was held in the Coffman Memorial Union at the University of Minnesota, Minneapolis. In spite of 20 below zero weather and a number of other competing meetings, 48 members and guests attended.

Following dinner, the meeting was called to order by Chapter Chairman Max Aker, Western Alloyed Steel Casting Co., Minneapolis. After a few words of welcome and announcements, R. E. Kennedy, A.F.A. National Secretary, Chicago, was introduced, spoke of plans for the 1943 Foundry Congress in April.

Dr. E. G. Meiter, Employer's Mutual Liability Insurance Co., Milwaukee, was the speaker of the evening on the topic "Foundry Hazards." The talk was illustrated by an exhibit of safety devices, and was followed by a lively open discussion period with Dr. Meiter answering various questions presented.

†University of Minnesota, and Secretary-Treasurer of Twin City Chapter.

NEO Chapter Honors Apprentice Winners

By Pat Dwyer,** Cleveland

WITH an exceptionally large attendance at the January 10 meeting of the Northeastern Ohio chapter, special plaques were presented to representatives of foundries and pattern shops whose apprentices won prizes in the 1942 A.F.A. apprentice contests. Chapter President Jack H. Tressler, Hickman Williams & Co., Cleveland, made the presentation. At the same time, the chapter gave

**The Foundry.

a year's subscription to *The Foundry* magazine to each apprentice from the Cleveland district who entered the contests.

Departing from the usual type of meeting, the technical sessions took the form of a quiz program, with Chapter Vice-President James G. Goldie, Cleveland Trade School, submitting the questions unrehearsed to a group of four experts. The group consisted of R. G. Wieland, Forest City Foundries Co.; H. M. Oehling, National Malleable & Steel Castings Co.; W. C. Manwell, Fulton Foundry & Machine Co., and F. J. Grondie, City Foundry Co., all of Cleveland.

Not a single question was fumbled, and the chapter members voted enthusiastically for another quiz night to be held in the near future.

Reporting the Central New York Xmas Party

By L. E. Hall,* Syracuse, N. Y.

THE Christmas party of the Central New York Chapter, held December 11 in the roof garden of the Onondaga Hotel, Syracuse, was a success in every sense of the word. Some 182 members and guests attended to enjoy an excellent buffet supper and floor show, and to participate in the drawing of prizes that featured the annual event.

For the excellent job of arrangements, all thanks are due the committee composed of the following:

Harry E. Comstock, Syracuse Chilled Plow Co.; W. D. Dunn, Frazer & Jones Co., Syracuse; Edw. E. Hook, Pierce Butler Radiator Corp., Syracuse; A. J. McBride, Whitehead Bros. Co., Buffalo, N. Y.; A. J. LaBoiteaux, Semet Solvay Co., Buffalo; F. F. Shortsleeve, Elmira, N. Y.; F. C. Wheeler, Kinman & Wheeler, Syracuse, N. Y.; E. G. White, Crouse-Hinds Co., Syracuse; W. G. Jones, International Heater Co., Utica, N. Y.; J. Ray Mathews, E. J. Woodison Co., Syracuse, and Secretary L. E. Hall.

*Syracuse Chilled Plow Co., and Secretary of Central New York Chapter of A.F.A.

St. Louis Learns of Plans for Congress

By J. H. Williamson,† St. Louis

DEVELOPMENT of plans for the 2nd War Production Foundry Congress, to be held by A.F.A. in St. Louis, April 28-30, were outlined to members of the St. Louis Dis-

†M. A. Bell Co., and Secretary-Treasurer, St. Louis District Chapter.

Members and guests of the Central New York chapter enjoying a carefree Christmas party in lieu of the regular chapter meeting, December 11. Top row, right, the committee responsible for the excellent arrangements: (Front row, left to right) Frank C. Wheeler, Kinman & Wheeler, Syracuse; F. F. Shortsleeve, Elmira, N. Y.; Ed E. Hook, Pierce Butler Radiator Corp., Syracuse; E. G. White, Crouse-Hinds Co., Syracuse; Chapter Secretary L. E. Hall, Syracuse Chilled Plow Co., Syracuse; (Back row, left to right) Harry E. Comstock, Syracuse Chilled Plow Co., Syracuse; Walter G. Jones, International Heater Co., Utica, N. Y.; A. J. LaBoiteaux, Semet Solvay Co., Buffalo; J. Ray Mathews, E. J. Woodison Co., Syracuse; W. D. Dunn, Frazer & Jones Co., Syracuse; A. J. McBride, Whitehead Bros. Co., Buffalo.

(Photos courtesy of L. E. Hall, Syracuse Chilled Plow Co.

trict Chapter at its January 14 meeting, held in Hotel De Soto there. R. E. Kennedy, National Secretary of the Association, attended from Chicago to cooperate with the local group who will act as hosts for the foundrymen's convention.

Mr. Kennedy described some of the interesting features being prepared for the three-day April meeting. He also commented on the growth of A.F.A. in the past year and explained the purpose behind the important Cupola Research Program.

Following Mr. Kennedy's talk, Chapter Chairman C. B. Shanley, Semi-Steel Castings Co., St. Louis, introduced the guest speaker of the evening, Ed King, Hill & Griffith Co., Cincinnati. Mr. King offered an interesting talk on the "Choice and Application of Foundry Facings," and gave the history, use and development of ten different types of foundry facings.

Castings Structure vs. Wear Topics of Western Michigan

By K. C. McCready,* Sparta, Mich.

SIXTY-FOUR members and guests attended the January 11 meeting of the Western Michigan Chapter of the Association, at the Ferry Hotel, Grand Haven, Mich. Principal topic of the evening was "Structure versus Wear," presented in most interesting style by Fred G. Sefing, International Nickel Co., New York, and Chairman of the Metropolitan Chapter.

Mr. Sefing's talk dealt principally with gray iron applications and the relation of wear in gray iron castings to different types of structures. Photomicrographs were presented illustrating types of structure having good and bad wear properties. Particularly stressed was the importance of the proper graphite pattern. General discussion followed the talk.

C. M. Clover, Clover Foundry Co., Muskegon, reported on new prospects as chairman of the membership committee, and Rudy Flora, also of the Clover Foundry Co., as chairman of the Cupola Research committee, reported on contributions made to the A.F.A. program by chapter area plants.

December Meeting

Western Michigan Chapter held its second annual Christmas party the night of December 14 at the Ferry Hotel, Grand Haven, with 120 members and guests present to enjoy the occasion. A turkey dinner, community singing (led by Frank Fisher), door prizes, interesting talks, a fine floor show, and dancing, made the evening one to remember.

A.F.A. National Secretary R. E. Kennedy, Chicago, spoke briefly on chapter activities. Vice-Chairman Al E. Jacobson, Grand Haven Brass Co., Grand Haven, sprang the surprise of the evening by introducing his son, Ensign Charles Jacobson, home on furlough from the famous cruiser U. S. S. Boise after the battle of the Solomons.

Ensign Jacobson gave a thrilling description of his experiences aboard the Boise, which single-handedly sank six Jap warships in 27 minutes.

*Muskegon Piston Ring Co., and Secretary Western Michigan chapter of A.F.A.

Annual Stag for 550 Southern Californians

By E. M. Hagener,† Los Angeles

MEMBERS of the Southern California Chapter of the American Foundrymen's Association gave their "all" at the annual stag party held on December 11, in Los Angeles. Approximately 550 members and friends, remembering the events of previous years, attended and enjoyed one of Hollywood's best stag shows, under the direction of Richard H. (Dick) Hughes, Pacific Metals Co. Ltd., Los Angeles.

Chapter President Earl Anderson, Enterprise Iron Works, Los Angeles, presided and, with able assistants, succeeded in turning the minds of those present momentarily away from gas rationing and kindred problems.

†General Metals Corp., and Secretary of the Southern California Chapter.

(Photos courtesy E. M. Hagener, General Metals Corp.)

A few of the chapter personalities who relaxed at the annual stag party of the Southern California chapter, December 11. Top, left to right — Geo. W. Effinger, Snyder Foundry Supply Co., Los Angeles, Membership Chairman; Director R. E. Popperwell, Reliable Iron Foundry, Los Angeles; Director Dominic Meaglia, American Foundry Co., Los Angeles; Dick Hughes, Pacific Metals Co., Ltd., Los Angeles, Entertainment Chairman. Bottom, left to right (seated)—Chapter President Earl Anderson; Chapter Secretary E. M. Hagener. (Standing)—Entertainment Chairman R. H. Hughes, Past Chairman George Emmett, Los Angeles Steel Casting Co., Los Angeles. (On stage)—Leonard O. Hofstetter, H. C. Donaldson & Co., Los Angeles, Custodian; Vice-Chairman Walter F. Haggman, Foundry Specialties Co., Huntington Park (at microphone).

Metropolitan Takes Up Problem of "Time-Off"

By R. E. Ward,** Bendix, N. J.

PUTTING aside, for the time, technical phases of foundry practice, members of the Metropolitan Chapter discussed the ever-increasing problem of manpower at the January 4 meeting, at the Essex House, Newark, N. J. Guest speaker was Lt. J. Douglas Gessford, U. S. N. R., Public Relations Office, New York.

Lt. Gessford stressed the seriousness of absenteeism in war production industry, resulting in the loss of many man-hours of work in the making of vital war materials. He stated that sugges-

**Eclipse Aviation Div., Bendix Aviation Corp., and Chairman, Publicity Committee, Metropolitan Chapter of A.F.A.

tions of industry would be welcomed, and announced that as a result of a recent survey the Navy Department is prepared to offer practical suggestions for decreasing the number of unexcused absentees.

Emphasizing his statements were the short talks given by two members of the armed forces who have seen combat service. Private Nick Sileo related his experiences fighting the Japanese in the Solomons, and Gunners Mate George Lambert, who recently received a citation for gallantry in action, told of transport service in the Mediterranean.

Their experiences brought home strongly the contrast between active service in our armed forces and the practice of taking time off for little or no reason in home industry. It was felt that such talks should be given to industry in general, as one influence on the absenteeism problem.

Central Indianans Enjoy Xmas Party

By Ralph A. Thompson,* Indianapolis.

APPROXIMATELY 80 members and guests of the Central Indiana Chapter gathered at the Washington Hotel, Indianapolis, December 19, for the organization's Christmas party. Those who braved the very bad weather conditions found an excellent dinner and program awaiting them, arranged by A. E. Murphy, Hickman Williams & Co., Indianapolis, chairman of the event.

*Electric Steel Castings Co., and Secretary, Central Indiana Chapter.

Jim Allan Contributes To Granite Cutting Code

James R. Allan, International Harvester Co., Chicago, Ill., chairman of the A.F.A. Industrial Hygiene Codes Committee, has been asked for advice on a code for dust control in the granite cutting industry, which is being considered by the American Standards Association as an American standard. Mr. Allan has written an extensive critique of the proposed code. In light of his experiences, as chairman of the A.F.A. committee, with various industrial and government bodies and through research conducted by his company in connection with A.F.A. code work, Jim is recognized for his knowledge of safety and hygiene practices in industry.

It is largely through his efforts that the Code for Recommended Practices for Grinding, Polishing and Buffing Equipment Sanitation of A.F.A. has been recognized by A.S.A. as an American standard.

Drawn for Office of War Information

Use Foundry Exhibit for War Training

THE Foundry Exhibit at the Museum of Science and Industry, Jackson Park, Chicago, is being used by the Army and Navy as part of their war training program. This exhibit was established through the efforts of a committee of the Chicago Chapter of A.F.A. in 1939. A chapter committee is working with the Museum to keep the exhibit up-to-date and to assist them in the problems that arise in connection with its operation.

The exhibit constitutes a fine public relations effort for the foundry industry as a whole. Thousands of people view it in operation annually, the majority of visitors being from outside the City of Chicago, making the Exhibit of national scope.

The present membership of the Chicago Chapter Committee which is cooperating with the Museum is as follows: Wm. L. Hartley, Link-Belt Co., Chicago, Chairman; H. W. Johnson, Northwestern Foundry Co., Chicago, Vice Chairman; M. F. Becker, Whiting Corp., Harvey, Ill.; V. G. Cornelius, Carnegie-Illinois Steel Corp., Chicago; L. L. Henkel, War Production Board, Chicago; R. W. Lindsey, Assn. of Manufacturers of Chilled Car Wheels, Chicago; E. B. Rich, Jr., American Foundry Equipment Co., Mishawaka, Ind.; B. L. Simpson, National Engineering Co., Chicago.

A.F.A. Presents Report To Engineering Deans

DURING the past year, the A.F.A. Committee on Cooperation with Engineering Schools conducted a survey on foundry instruction in such schools. This survey was presented and discussed at a session of the 1942 War Production Congress in Cleveland. Copies of the survey, together with two additional papers, have been sent to the deans. The first paper is entitled "The College Graduate Looks at the Foundry Industry" by C. J. Freund, Dean, College of Engineering, University of Detroit, Detroit, Mich., who, before he assumed his present position, was engaged for many years by the Falk Corp., Milwaukee, and, therefore, has a complete understanding of the foundry's training problems.

The second paper is entitled "Engineering Students in the Foundry" by S. D. Moxley, Chief Engineer, American Cast Iron Pipe Co., Birmingham, Ala. This material, bound in pamphlet form, has been broadcast to some 250 deans of engineering schools and heads of departments under which the foundry division functions, for the purpose of increasing interest in the foundry industry and to give them a first-hand view of what the industry requires from engineering schools.

Schedule of February Chapter Meetings

February 1

Central Indiana
Washington Hotel, Indianapolis
H. E. BAUGHMAN
Wheeling Steel Corp.
"Coke and By-Products"

✦

Chicago
Chicago Bar Assn. Restaurant
W. E. GEORGE
Campbell, Wyant & Cannon Foundry Co.
"Plant Protection, Safety and Good Housekeeping"

✦

Metropolitan
Essex House, Newark, N. J.
FRED A. FOXALL
Eclipse Aviation Div., Bendix Aviation Corp.
"Magnesium and Aluminum Foundry Practice"

✦

Western Michigan
Ferry Hotel, Grand Haven, Mich.

✦ ✦

February 3

Chicago
Peoples Gas Bldg. Auditorium
FOUNDRY LECTURE COURSE
(See page 15 for program)

✦ ✦

February 6

Western New York
Hotel Seneca, Rochester
H. H. JUDSON
Gould Pumps, Inc.
"Non-Ferrous Castings"

✦ ✦

February 8

Cincinnati
Cincinnati Club
R. G. MCELWEE
Vanadium Corp. of America
"Material Substitutions"

✦ ✦

February 9

Northern Illinois-Southern Wisconsin

✦ ✦

February 10

Michiana
(Joint meeting with Notre Dame Chapter, A.S.M.)
Univ. of Notre Dame, South Bend, Ind.
J. H. VAN DEVENTER
Iron Age

✦ ✦

February 11

Northeastern Ohio
Cleveland Club, Cleveland

February 11

St. Louis District
DeSoto Hotel
PAT DWYER
The Foundry
"Gates and Risers"

✦ ✦

February 12

Philadelphia
(Joint meeting with Welding Society)
Engineers Club
PAUL FFIELD
Bethlehem Steel Co.
"Welding of Castings"

✦

Northern California
Engineers Club, San Francisco
CHAS. SCHUREMAN
F. E. Schundler Co.
"Sand"

✦

Toledo
Hillcrest Hotel
M. E. BROOKS
Dow Chemical Co.
"Magnesium Foundry Practice"

✦ ✦

February 15

Quad City

✦ ✦

February 17

Chicago
Peoples Gas Bldg. Auditorium
FOUNDRY LECTURE COURSE
(See page 15 for program)

✦

Southern California
Elks Club, Los Angeles
SPEAKER: O.P.A. Official
"Price Regulation"

✦ ✦

February 18

Detroit
Rockingham Memorial Institute
ROUND TABLE MEETINGS
Aluminum, Magnesium, Malleable, Steel

✦ ✦

February 18-19

Wisconsin
Schroeder Hotel, Milwaukee
6TH ANNUAL FOUNDRY CONFERENCE
(See page 24 for program)

✦ ✦

February 19

Birmingham
Tutwiler Hotel

✦

Eastern Canada-Newfoundland
Mt. Royal Hotel, Montreal
ROUND TABLE MEETINGS

February 19

Northern California
Clark Hotel, Stockton
CHAS. SCHUREMAN
F. E. Schundler Co.
"Sand"

✦ ✦

February 26

Chesapeake
Engineers Club, Baltimore

✦

Ontario
Royal York Hotel, Toronto
A. C. BOAK
Dept. of Munitions and Supply, Ottawa
"Control of Non-Ferrous Metals"

✦ ✦

MARCH MEETINGS

March 1

Central Indiana
Washington Hotel, Indianapolis
H. J. ROWE
Aluminum Co. of America
"Aluminum Alloy Castings"

✦

Chicago
Chicago Bar Assn. Restaurant
ROUND TABLE MEETINGS
Steel—Salvage and Substitute Materials.
Gray Iron—Core Materials, Equipment and Results
Malleable—Sand Control Practice.
Non-Ferrous—Melting.
Patterns—Substitution of Metal Parts.

✦

Metropolitan
Essex House, Newark, N. J.
"Practical Use of X-Ray and Gamma Ray Inspection of Castings"

✦

Western Michigan
Ferry Hotel, Grand Haven, Mich.

✦ ✦

March 2

Michiana
LaSalle Hotel, South Bend, Ind.

✦ ✦

March 3

Chicago
Peoples Gas Bldg. Auditorium
FOUNDRY LECTURE COURSE
(See page 15 for program)

✦ ✦

March 5

Western New York
Hotel Touraine, Buffalo

To Help the Foundry Industry Meet Urgent Military Requirements for Cast Metals...ON TIME!

THE SECOND

War Production Foundry Congress

ST. LOUIS, MISSOURI
APRIL 28-30, 1943

The 1942 Foundry Congress helped mobilize the industry for a tremendous wartime task. The 1943 Congress will do much toward *finishing the job.*

Then, the need was for Increased Production. Today, the necessity is to maintain the tide of vital weapons of war . . . *without delays.*

Last year, many foundries still were asking: "Show us what to do!" Today, the industry's war cry is: "Show us how to do it . . . *better!*"

The 1943 program is designed to answer that call . . . in immediately useful fashion, at an important foundry center, and with a streamlined, time-conserving, 3-day meeting of importance to every branch of the castings industry.

Whether your interests lie mainly in steel, malleable iron, gray iron, brass and bronze, aluminum and magnesium, patternmaking, or in some other phase of foundry work . . . this Congress is planned *to serve you!* One idea gained at St. Louis may break a bottleneck. One new thought obtained in contact with other men of the industry may speed more material overseas, sooner. One different slant on a production puzzle may solve it . . . and save men's lives in action.

Plan NOW for you and your men to attend the 1943 Foundry Congress . . . and bring your individual problems with you.

Photo Credits—Below and Right: U. S. Army Signal Corps; Top: U. S. Air Corps; Bottom, Right: Associated Press.